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Cover photo by **Paul W. Thayer**, Professor Emeritus, North Carolina State University

It was April 18, 1775 in Concord, after the first shots were fired in Lexington. On to Concord, 400 Minutemen exchanged gunfire with 120 Redcoats at the North Bridge. Pealing church bells spread the alarm and colonial numbers grew to 5,000. The British would have been massacred, but reinforcements arrived as they fled back to Boston. April 19, 1775 … the war had begun! The picture is of the North Bridge, leading to the monument.

President's Column

Tammy Allen

As I finish writing this column, I am attending the Congress of the European Association of Work and Organizational Psychology. How inspiring it is to be surrounded by a rich array of spoken languages, all with the singular focus of engagement in the science and practice of work psychology. The energy that I felt at the Houston SIOP conference continues to be palpable here among our Alliance colleagues. Whether we call it industrial and organizational psychology or work and organizational psychology, we are all part of a vibrant and growing field.

Thanks to the hard work and dedication of the SIOP AO and to the many members who volunteer countless hours each year on behalf of SIOP, our Society is in great shape. There are many exciting things happening from building the SIOP brand to the growth of the my.SIOP community to the reinvigorated Leading Edge Consortium. In this column, I want to take the opportunity to discuss some of the activities happening within SIOP as well as some ways that you can get involved. There are several ways in which you can help your professional organization grow and advance through advocacy or service.

Updated SIOP Strategic Objectives

SIOP's strategic plan serves as a catalyst and a guide for all projects undertaken. Our strategic plan was developed in 2005–2006. The strategic objectives outlined in this plan have served our Society well, but as with any strategic plan, a thorough review and update is necessary periodically.

At the January executive board meeting, then-President **Doug Reynolds** led the board through a strategic planning activity. This activity included a review of where we stand with regard to each of the four strategic goals and the generation of ideas for improvement. The exercise resulted in revisions to the current goals. The essence of the 2005–2006 plan remains intact but the revised strategic goals are more focused, include example metrics, and are explicitly linked with each of our ongoing initiatives. The updated four strategic goals that will guide our efforts over the coming years are:

1. Become the premier and trusted authority on work-related human behavior.
2. Increase the awareness and use of I-O psychology.
3. Meet the needs of those engaged in the science and practice of I-O psychology throughout their careers.
4. Model and reinforce the effective integration of science and practice.

For more information, you can find a copy of our strategic goals and initiatives document at http://www.siop.org/reportsandminutes/strategicplan.aspx.

Let Me Introduce You to I-O Psychology

Our field is in a terrific position. The demand for graduate training in I-O psychology is strong. Data from a 2009–2010 APA study (http://www.apa.org/workforce/publications/11-grad-study/applications.pdf) shows that applications to I-O psychology doctoral programs are second only to social and personality psychology among nonhealthcare subdisciplines. I-O has more enrolled doctoral students than do cognitive, social and personality, or developmental psychology programs. The job market for those trained as I-O psychologists is also strong (http://www.siop.org/Media/News/hotjob.aspx). Research is thriving. In 2011, the *Journal of Applied Psychology* received 962 submissions, more than any other APA journal (http://www.apa.org/pubs/journals/features/2011-statistics.pdf).

Despite these compelling numbers, we know that not all Intro to Psych courses or textbooks cover I-O psychology. Over the years I have heard from SIOP members who teach Intro to Psych courses that they don't even cover I-O! It has been estimated that 1.5 million college students take an introductory psychology course each year in the

U.S. (Cush & Buskist, 1997). Imagine if each of those 1.5 million had the opportunity to learn about I-O psychology. And why shouldn't they? As **Howard Weiss** has so eloquently spoken and written about, work is a fundamental human behavior (Weiss, 2011). An understanding of work, workers, and workplaces should therefore be essential to any introduction to the science of human behavior.

Of course this is not a new conversation. We have made efforts in the past to address the issue. As I mentioned during my brief address at the closing plenary session in Houston, **Scott Tonidandel** and **Whitney Botsford**, current and incoming Education and Training chairs, respectively, are currently reviewing and evaluating our previous efforts to increase the inclusion of I-O psychology in introductory psychology courses, texts, and exams. The review will be followed by a set of recommendations for future steps and metrics that can be used to chart our progress. However, there are actions that many of our members can initiate now.

Let's start a grassroots campaign to include I-O in Intro to Psych courses. We can and should try to influence decisions about coverage of I-O in Intro Psych at the local level. Those of us in psychology departments can do our part to break down the barriers. I learned from **Paul Levy** several years ago that inclusion of I-O in Intro to Psych is required at the University of Akron. I recently asked Paul about that decision. Paul stated, "We decided long ago that to teach Psych 100 without reasonable and focused exposure to I-O would be inappropriate and would suggest that a large and integral part of our department wasn't worthy of any attention in our Intro course." Akron also makes textbook decisions based on the availability of I-O material. Modeling Akron's example, we can all be individual advocates for the inclusion of I-O, whether we are the sole I-O psychologist in a department or part of a large I-O training group. Our goal should be to ensure every single student who has taken an Intro Psych course be able to answer the question, "What is I-O psychology?" Even if these students go on to major in other psychology disciplines, or even nonpsychology majors, they will leave their Intro to Psych course with a good understanding of what I-O psychology is, what we as I-O psychologists do, and how what we do impacts the world of work, thus increasing our impact and building future connections beyond our discipline.

Join the SIOP Advocacy Army

One of our major areas of emphasis over the coming year is the development of our internal and external infrastructure for science advocacy. Our members have told us repeatedly that we need to more strongly and effectively advocate for our science and increase our visibility with external stakeholders. We will be sharing more information about this effort throughout the year, but I am asking for your help now. Building our internal infrastructure involves being able to quickly call upon and sometimes mobilize members.

Last year SIOP launched the my.SIOP online member community. My.SIOP serves as a hub for coordinating activities within SIOP. We want to use my.siop as one mechanism for organizing engaged, capable, and interested members who are willing to monitor science opportunities and threats, disseminate information in a variety of formats, and mobilize to quickly address issues as they arise.

If you are interested in science advocacy and are willing to contribute to advocacy activities (e.g. write a one-page briefing on a topic of expertise, sit on science panels, testify before Congress, educate others on the application of our science, etc.), please consider joining the SIOP Advocacy Volunteers on my.SIOP (http://my.siop.org; Note: you must log in to my.SIOP then search for the group). This is your chance to broaden and enhance the impact of our I-O psychological science.

Six Degrees of I-O Psychology

At the closing plenary, I talked about creating a map of I-O science. Understanding work behavior should be considered a fundamental part of psychology, but how is our science connected to and contributing to the broader discipline of scientific psychology? There are various ways of having influence. Historically, when we discuss influence, we tend to think of the impact that we are having from an applied perspective. That is, ways in which I-O psychology is being used to influence organizational productivity, team functioning, or individual well-being. Influence is considered in terms of how well connected we are with the business community or with partner organizations. A question that we rarely ask ourselves (at least from my perspective) is how much are we influencing science? Outside of management, what other areas of science cite our work? With a better understanding of how our science is connected

with other areas of scientific inquiry we can identify gaps, threats, and opportunities that can inform and advance our strategic objectives.

If you are familiar with the visualization tools used for creating maps of science and cultivating the input that can be used for this project and would like to be involved, please contact me. Even if you don't know the tools but would like to be involved, I would love to hear from you.

Staying Connected

My theme for the year is connection. A thread of connection is woven through each of the initiatives discussed, whether it be connecting undergraduates with the field of I-O, connecting our members in a way that permits us to quickly mobilize around a common purpose, or examining how our science connects to other fields. This theme will carry through to the Hawaii conference. Our theme track chair, **Kristen Shockley**, and her team are already hard at work designing a program of TED-like talks that present ways to expand I-O science and practice through connection. You won't want to miss it.

Zack Horn and the electronic communications committee are hard at work developing strategies and tools that we can use to better connect internally as well as externally. We will continue to consider ways in which we can use social media to meet member needs and further our strategic objectives. To enable me to connect quickly, I recently took the plunge and opened a Twitter account. My intention is to use Twitter as another tool for communicating our work to others and staying connecting with each other. I have already made a concerted effort to find and follow SIOP members who are on Twitter. If I haven't found you, and you would like to join me, my Twitter handle is @TammyDAllen.

Let Us Give Thanks

I have been fortunate to serve on the Executive Board during the tenure of a fantastic group of past presidents. I want to thank Doug Reynolds, **Adrienne Colella, Eduardo Salas, Kurt Kraiger**, and **Gary Latham** for being excellent role models, for providing their encouragement, and for sharing their wisdom.

I also want to thank you for the privilege to serve as your president. The SIOP Executive Board is composed of an outstanding group of leaders. SIOP has a team of dedicated committee chairs and members. I am looking forward to a busy and exciting year. Get involved. Get connected.

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Discuss this article in the *TIP* section of my.SIOP forums!
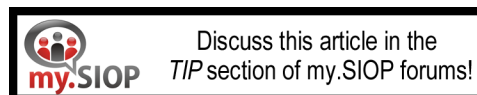
The Editor's Out-Box

Morrie Mullins
Xavier University

My graduate school funding came from two sources. One of those was a grant, which while awesome and very important to letting me eat and pay rent, is not germane to the present discussion. Much more important was a project funded through what I think was a NIST/NASA grant, in which I was part of a project team tasked with evaluating a new initiative. There was this "Internet" thing that was starting to gain traction, you see, and we wanted to determine whether an online resource, targeting manufacturers and attempting to meet their needs, would be viewed as at all useful/useable.

Or, to put it more succinctly: Would businesses bother using the Internet?

In the context of the mid-1990s, this was a research-worthy question. We have a ton of hindsight, and a generation of I-O trainees, who may scratch their heads at why it was ever asked. At the risk of sounding all, "Stay off my lawn!" I have to say that the times, they have a-changed. There was life before the Internet, before we could buy almost anything we wanted online, before we could stream movies and tv shows or download books, before we could download articles and had to go to a big building called a "library," before we had laptops and tablets and smartphones. So, yes. Part of my funding in grad school involved asking whether this innovative "Internet" technology would interest organizations (Mullins, Kozlowski, Schmitt, & Howell, 2008; that should take the paper to a total of "9" in the "as cited by" on Google Scholar!).

I've always been interested in online communities, and the opportunity to be the first editor of the online-only incarnation of *TIP* was more than I could pass up. I've posted a couple of editor's blogs on my.SIOP and an introductory video, so I'll try not to restate too much, but the important thing is this: I know a fraction of the potential that the move to online publishing offers us. It's more immediate, it's easier to update, it's more interactive, and it changes the act of reading from a static behavior into what is potentially an interface with a larger community.

My two "buzz-words" for the coming 3 years are "content" and "community." I want to provide high-quality, relevant, interesting content, and I want *TIP* to integrate with and become even more integral to the larger SIOP community. You'll see a lot of links within the pages of *TIP*, and many of them go to my.SIOP (particularly the forums and the library). This is our online community; we have an amazing community already. With all the online resources SIOP has to offer, I can only see that improving.

And we won't need a retrospective study of archival data to tell us that, either.

On, then, to the content!

And content is something we are decidedly *not* short on. We start with a message from our President, **Tammy Allen**, in which she outlines major things that are going on in SIOP and encourages all of us to get involved. Then, in keeping with the general idea of welcoming you to *TIP*'s online format, we're featuring an article by **Anita Blanchard** on virtual communities in I-O. Part lit review and part call-to-action, Anita's paper lays out some of the key things that we know and that we need to know, as we increasingly find ourselves interacting with virtual versions of one another. I'm particularly happy with this paper given how well it dovetails with the increasing emphasis on my.SIOP because there are important lessons we can learn about how to make the most out of the online form of the SIOP community. (It's also worth noting that my.SIOP is a great "sandbox" for observing the development of an online community!)

Other feature articles include the eagerly anticipated salary survey report (short form, of course, the longer form will be available for download from the SIOP.org web page shortly after you receive *TIP*) by **Charu Khanna, Gina Medsker,** and **Ryan Ginter. Mengqiao Liu, Nathan Bowling, Jason Huang,** and **Tiana Kent** offer up insights into how SIOP members feel about insufficient effort responding (IER) in surveys and how much of a threat we perceive it to be. They end with a call for commentary, highlighting several questions that they're interested in hearing more about from you, so head over to the [my.SIOP forums](#) (you'll need to log in) and share your thoughts! In fact, just in general, it's important to mention that the my.SIOP forums now have a special section devoted to *TIP*, and we encourage you to post comments, ask questions, and just generally continue the conversation begun by our various features and editorials.

We've also got the fourth part of the SIOP Graduate Program Benchmarking survey, by **Rob Tett, Cameron Brown, Benjamin Walser,** and **Scott Tonidandel**; the results of an interesting study by **Amanda Steiner** and **George Yancey** on what employers are looking for when they hire an I-O psychologist; a celebration of the 40th "birthday" of competencies by **Thomas Stetz**; and a description of an interesting classroom exercise that turned into quite the learning opportunity by **Jesse Michel**. All great stuff!

TIP's editorial columns have seen some changes, including the introduction of two new columns and the rebranding of another. **The Modern App**, written by **Nikki Blacksmith** and **Tiffany Poeppelman**, is a new column devoted to social media and technology in the workplace, and felt like a natural fit for e-*TIP*. Also new is a column on **Organizational Neuroscience** (ON) by **M. K. Ward** and **Bill Becker**. Following on the heels of their "standing room only" symposium in Houston, M. K. and Bill will be highlighting research and application opportunities not only in ON, but in areas related to interdisciplinary research in general. As you'll see from **Autumn Krauss**'s APA program report later in the issue, research that crosses divisional boundaries is a major theme right now.

M. K.'s former coauthors for the **Spotlight on Global I-O** column, **Lori Foster Thompson** and **Alex Gloss**, have taken the reins of well-respected former columnist **Stuart Carr** and combined the **Quo Vadis** column he developed with their own global I-O focus to bring us the new **Spotlight on Humanitarian Work Psychology** editorial column. They are joined by **Ishbel McWha**, the chairperson of the Global Organisation for Humanitarian Work Psychology, and for their first (new) column offer a fascinating interview with Governor Scott McCallum.

"Wait, Morrie, isn't that a lot of changes?" Well, anonymous reader/narrative device, not really. You see, most of the columns and columnists you know and love are still here and still providing great content and updates. In the **Practitioners' Forum**, **Tracy Kantrowitz** updates us on the Professional Practice Committee's activities, and **Michael Trusty** shares information about the development of career paths for I-O psychologists. In **The Academics' Forum**, **Tori Culbertson** shares information about the "SIOP Wikipedia Initiative," which is a call for us to take ownership of I-O related information on Wikipedia. The way I see it, Wikipedia isn't going away, so taking control of our "message" on it offers some great pedagogical and branding opportunities!

In the **International Practice Form**, **Alex Alonso** and **Mo Wang** introduce us to Drs. James and Alison Eyring, who share their insights and expertise on issues related to emerging markets. **Marcus Dickson**, in **Max Classroom Capacity**, addresses the paucity of I-O classes offered as part of most undergraduate curricula and points out the high value-added of I-O course work even for students who never go on to graduate study. Given where psychology undergraduates tend to end up, job-wise, the data I've seen suggest that he's right. My department chair likes to comment that, "Most of our psychology majors are actually undeclared business majors," given their employment trends, so we really **ought** to be advocating for more I-O classes. Instead, as Tammy Allen points out, I-O is often an afterthought and may not even be included in introductory psychology textbooks.

Then, what would *TIP* be without **Paul Muchinsky**'s **The High Society** column (answer: less entertaining – I hope you enjoy his letter to "Hugo" as much as I did!); **Art Gutman** and **Eric Dunleavy**'s **On the Legal Front** column (answer: less timely because Art and Eric review and analyze a case so recent that it wouldn't have been able to be included in the July *TIP* under our print publication schedule); or **Rob Silzer** and **Chad Parson**'s **Practice Perspectives** column (answer: less focused not just on who we are as a Society but *where* our members are and what that means)? Our **TIP-TOPics** team from the University of Akron provides us with their final column, a wonderful top-10 list that any new graduate student ought to pay attention to and that will have those of us who are already through our grad school years nodding in fond (or not-so-fond!) remembrance.

Ashley Walvoord and **Liu-Qin Yang** continue their series on funded research with a piece on foundation grants, featuring representatives of both SIOP and SHRM. Our friends at SHRM thought the information contained in the article (and its continuation, which will be available for download from the SIOP.org website and in the my.SIOP library) was so useful that they're going to be posting it to the SHRM Foundation's website as well. **Mike Zickar** occupies the **History Corner** this month, and then we have great reports from **Robin Cohen** and **Eden King** about SIOP Houston, along with coverage of and information about key events at the conference. **Evan Sinar** updates us on SIOP 2014 (Honolulu!), and **Milt Hakel** shares what's new in the **Foundation Spotlight.**

In terms of committee reports, we have some great updates from **Mariangela Battista** of SIOP's Institutional Research Committee (ever wonder how to get your hands on SIOP data? Wonder no more!), **Zack Horn** of the Electronic Communications Committee sharing a my.SIOP roadmap, **Larry Martinez** of the LGBT Ad Hoc Committee reporting on that burgeoning committee's status and activities, **Kevin Mahoney** and **Jeff Cucina** introducing videos of an interview with **David Campbell**, and more!

I could keep going. But, just like I needed to keep the video short, if I were to tell you how excited I am about everything in this issue, you'd never get a chance to read it! So, if you made it this far, thanks —you're probably more patient than I am! And if you didn't, and are already reading and enjoying *TIP*, that's fine as well. You just happen to have missed me giving my email address (mullins@xavier.edu), once again asking you to follow me on Twitter ([@TIP_Editor](https://twitter.com/TIP_Editor)) where I post updates and links to I-O-relevant articles, and encouraging you once more to let me know how we're doing—and to submit your ideas and papers. I love seeing what everyone is doing, and hope you enjoy reading about it all here in the pages of *TIP*!

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Discuss this article in the *TIP* section of my.SIOP forums!
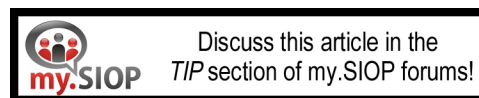
What Can I-O Do?

Dear Editor,

The Society for Industrial and Organizational Psychology has a new and innovative blog, *I-O Practitioner's Network* chaired by **Ron Kennedy** [Editor's note: Link added]. Ron asks how consultants and practitioners of I-O might contribute through their practice to the goal of improving our client organizations. At the SIOP meetings in Houston, I attended several relevant "interest groups" with mainly practitioners. These sessions were about such topics as adapting to a new and different generation of millennials and leadership competence. These sessions were by far the most interactive and informative of the conference for me, and the poster sessions were next.

These sessions provide a sample of I-O trained human resource directors from many large and visible firms. Cutting through the confrontation of questions from a seasoned I-O researcher, these directors stopped talking about their paper structure when they gradually felt comfortable among supportive colleagues. Their bosses weren't present. Their consensus was that their people operations were capable of forcing the millennials to conform to their system of leadership by command and control. They would do this by commanding millennials to answer the questions that their bosses were afraid to ask and command the boss to listen.

I asked them if they trained every employee before or after they were promoted to a supervisory, managerial or executive position. After some silence, they admitted that many such promotions went without any leadership training. When I asked them if they evaluated their training and development programs, again after some silence, they admitted that they didn't have the funds to do this. I informed them that we were talking about a $12 billion annual business in the U.S. that has almost no serious evaluation. They looked at the carpet.

I told them that my colleagues in leadership development of middle managers agree that their pupils seldom get past the topic of first-level supervision because their trainees never had it or found that it didn't work for them. They said that they were most concerned with retention in view of the pirating of their best managers and executives. They clearly wished that they possessed real leadership, and they knew what it was on the job. Those that emphasized leadership training complained that they were training for their competition.

Next, I described an exemplar organization which was performing all 10 programs of people operations as I-O psychology prescribes based on over 100 years of research in organizations. They protested that Google has more funds than they do for the perks. I suggested they read some of the Google literature to see that the engine of their program is a redesigned organization to allow people to have fun and become their most effective. This is accomplished by trusting their employees and dismantling all the unnecessary controls encouraged by lawyers. The first to be jettisoned was command and control supervision. Treating your direct reports as untrustworthy is not the way to enact leadership-motivated excellence. They select people that are trustworthy and team players, and doing everything to make them effective is most important job of supervisors, managers and executives. Let's stop giving Dilbert so much cartoon material. They didn't laugh.

George Graen
SIOP 1976
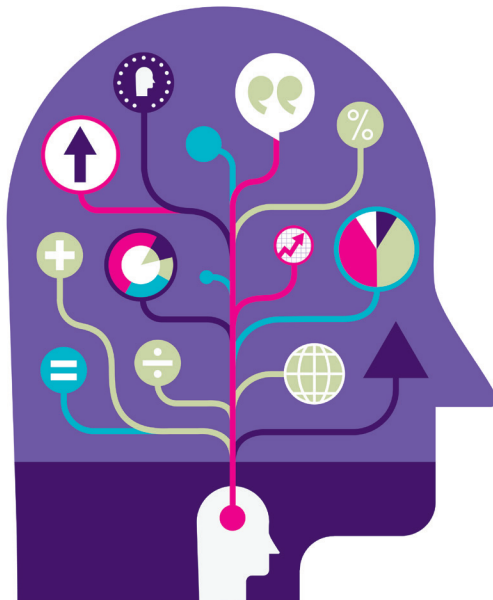
Virtual Communities in I-O Psychology

Anita Blanchard
University of North Carolina-Charlotte

Virtual communities are groups of people who interact primarily through information and communication technologies (ICT) and who have developed attachments with each other and to the group (Blanchard, Welbourne, & Boughton, 2011; Ren, Kraut, & Kiesler, 2007). Virtual communities have been functioning professionally in organizations and socially in society for over 30 years (Rheingold, 1993; Sproull & Kiesler, 1986). Nonetheless, research about these online groups, particularly how they develop, what makes them successful, and their effects on face-to-face (FtF) organizations and employees, lags, particularly in I-O psychology. The goal of this article is to define virtual communities for I-O psychology researchers and practitioners, to discuss the current state of virtual community research, and to highlight the important future directions of research and practice.

What Are Virtual Communities?

An initial issue in virtual communities is agreeing about what is meant by the term. Although "virtual" and "online" are effectively interchangeable, a more substantive problem is when "group" and "community" are used to refer to the same entity. In this paper, I use the term "online groups" to broadly refer to groups of people whose interactions are supported by ICT (e.g., a listserv). "Virtual communities" refer more specifically to a subset of online groups in which there is a sustained membership of people who have also developed an attachment to the group. This distinction is important because community members may have a more vested interest in its success and be more influenced by it (Blanchard et al., 2011).

Table 1 provides examples of some current types of professional online groups and virtual communities. Although this table is not exhaustive, it demonstrates the variety of entities which have been called virtual communities, ranging from listservs to Amazon. These entities have technological features and interaction processes that can be similar or very different. For example, professional discussion forums and communities of practice are very similar. They vary primarily by how much of the discussions are devoted to general professional issues or solving specific work problems, respectively. These two entities, however, are quite distinct from social media or online review sites, in which the interactions between members are more limited.

Table 1

Professional Online Groups and Virtual Communities

Name	Definition	Example
Listservs	Email discussion groups	Professional email "blasts" or other email distribution groups
Blogs	Essays written by an author or authors in which others can comment	Professionals sharing research, media stories or reflections of particular issues
Discussion forums	Interactive groups to exchange information and social support for professionals and those interested in the profession	A group for medical professionals to discuss educational options, current research, and discuss problems with coworkers, patients, and general job issues
Communities of practice	Interactive groups in which professionals solve specific problems by sharing knowledge	A group for medical professionals to discuss issues and problems related to specific cases under their care
Social media	Online networks of people who may or may not have reciprocal connections, but who can share information and react to others' information	Facebook, Twitter, LinkedIn, Tumblr
Wikis	Editable web pages in which knowledge and information is shared about specific topics	PR Wiki, for public relations professionals to share PR related articles and tools
Online review sites	Interactive rating portions of retail sites	Yelp, TripAdvisor, Amazon, Ebay

It is important, then, for researchers and practitioners to clearly define the essential characteristics of a virtual community. For example, does a virtual community consist primarily of ongoing group discussions or does it support one-way information distribution to which others react? Are members' identities connected to their face-to-face (FtF) identities or not? In addition, technology changes so quickly that it is impractical to tie research to one specific ICT; we need to be able to identify the essential characteristics of the technology to generalize across ICT. For example, single discussion forums were the predominant form of virtual communities for nearly 20 years. Twitter and Facebook are now immensely popular. What are the interaction technological features that do (and do not) contribute to "community" across these ICT?

Further, how do these virtual communities relate to employees and organizations, and thus I-O psychologists? Virtual communities can be intraorganizational or extraorganizational. Intraorganizational virtual communities of practice are clearly relevant to employee and organizational performance. Other intraorganizational virtual communities may be social in nature (e.g., a health and wellness initiative for employees) and still highly relevant for employee and organizational functioning. Extraorganizational professional virtual communities are more common (and more easily accessible to researchers) and may increase productivity due to the novel informational character inherent in their social networks (Pickering & King, 1995). Large intraorganizational virtual communities spanning multiple locations can also contain information novel to a local employee. Still, extraorganizational virtual communities span organizational cultures and increase social networking, potentially adding knowledge and perspectives not readily available to a particular organization (Blanchard, Askay, & Callas, 2010). New extraorganizational forms (e.g., Yelp) in which volunteers contribute to the work of the organization may be relevant to some I-O psychologists. Finally, social media like Facebook and Twitter are growing in use by organizations and their employees. Sometimes, they are promotional (e.g., encouraging constituents to some action), but they can also keep employees informally connected to each other. Although it is not clear how these social media will affect employees and organizations, top-tier research journals like *Organization Science* and the *Journal of Computer-Mediated Communication* are devoting forthcoming special issues to the use of social media for work related purposes.

Current Research on Virtual Communities

An extensive review of all of the different types of virtual communities is beyond the scope of this paper. Instead, this section focuses on discussion forums and communities of practice, the most common and highly researched virtual communities. These virtual communities are also more likely to have strong effects on outcomes of interest for I-O practitioners and researchers. They can increase knowledge sharing and creation, individual performance, organizational commitment, organizational identity, sense of community, occupational commitment, trust, and social capital (Blanchard et al., 2010; Hsu, Ju, Yen, & Chang, 2007; Ren et al., 2007). These outcomes do not just stay within the virtual community but can transfer to the organization. For example, social capital may emerge within the virtual community, but it may also increase the organization's FtF social capital as online participants move their interactions and knowledge to FtF interactions.

Initial research suggests that the virtual community does serve as a conduit for the sponsoring organization's identity, commitment, social capital, and knowledge (e.g., Hampton & Wellman, 2001). However, we are in the early stages of this research. One reason for this lack of research is the need to first understand what makes a virtual community successful as well as defining what success means for a professional virtual community. Although sustained membership and attachment to the virtual community have been identified as essential, other components include the amount of activity (i.e., discussions), the overlap between FtF and online participants, and the longevity of the virtual community. An agreed-upon definition of "virtual community success" remains elusive, but the following sections present current research in these generally agreed-upon important areas, including the social processes and technological features involved. Although focusing on the technological features may seem out of the purview of I-O psychology, conceptualizing these features as part of the (virtual) environment allows researchers to use organizational relevant environmental psychology theories (e.g., Stokols, 1995) to move the research forward. In addition, I will discuss issues that make professional virtual communities distinct from research on social ones.

Discussions. Discussions (i.e., the public interactions between members) are the most important component of successful virtual communities (Baym, 1995; Kraut & Resnick, 2011). Some researchers have focused on the discussions as exchanges of socioemotional and informational support (Blanchard et al., 2011) while others have focused on the knowledge created that can be used on the job (Hsu et al., 2007). Underlying both of these approaches though is members' active contribution of valuable communication.

Why do members participate? For the active members (i.e., those who post messages), participation may start because of a need for information and then continue out of feelings of reciprocity, attachment, and recognition (Blanchard et al., 2011; Constant, Sproull, & Kiesler, 1996). However, only a small percentage of members (e.g., 5 to 10%) actively participate in the discussions. The vast majority of members are "lurkers" who frequently read but rarely if ever post messages (Preece, Nonnecke, & Andrews, 2004). Some consider lurkers negatively as freeloaders, but a virtual community of 1000 members would implode if every member regularly posted. For lurkers, participation may start out of curiosity and a need for information, and then continue out of attachment to the group (Preece et al., 2004). Participating in virtual communities is likely to also be enjoyable, with humor and inside jokes being very common.

Technological features of these discussions include whether the most recent reply moves the discussion to the top of the page, the inclusion of and ability to edit previous messages in later messages, and the ability to store the messages for future reference. Although participants can work around technological challenges to make the discussions work, technological features that make clear which are recently active discussions ease participation.

For professional virtual communities, what the members discuss is important: Are they asking for help or simply sharing "best practices?" For some professions (e.g., medical fields) or within some organizations, employee members may feel particularly vulnerable if they reveal a lack of knowledge. Employee members may be sensitive to coworkers' interpretations of their questions; thus, saving face may be an issue in professional but not in social virtual communities. This makes the issue of identity particularly relevant in professional virtual communities.

Participants and their identity. Virtual communities must have a sustainable participant base (Kraut & Resnick, 2011). Potential participants must be aware of and find the virtual community (particularly if it is extraorganizational), be attracted enough to initiate membership, stay engaged enough to return to the virtual community, and contribute communication and information. These are nontrivial issues; Ren et al. (2007) found that even within a highly successful social virtual community, the mean membership tenure was 19 days.

A participant's identity has always been important in virtual communities because of the ability to separate one's FtF identity from one's online identity. Researchers originally thought online group members would prefer to be anonymous (e.g., Postmes, Spears, & Lea, 1998), but it is much more common for members to have their real identities linked to their online group identities or to use pseudonymous identities, which are persistent in the group but not linked to a FtF identity.

As members continue their participation, they begin to recognize other members and feel that they too are known. Researchers are interested in how virtual community success is related to knowledge of and relationships with specific others (Ren et al., 2007). Too much focus on particular individuals may lead to a breakdown in the group due to the process of individuation (Blanchard et al., 2011; Postmes et al., 1998). Paradoxically, feeling that one's own identity is known within the virtual community is related to virtual community success (Blanchard et al., 2011) likely through the process of optimal distinctiveness (Hamilton, Sherman, & Lickel, 1998), the ability to be an individual within a group.

Technology features related to identity include a member's username, signature file, profile information, and other automatic information available from the ICT (e.g., tenure, number of posts, reputation rating). Both administrative policies and informal social norms affect whether users' identities are linked to one's FtF identity or are pseudonymous. For example, AnitaB or ProfAnita would be more identifiable than IOProf, but all three identities would be recognizable over a period of time in a virtual community.

Issues of participation and identity in professional virtual communities are complicated. First, a sufficient participant pool is necessary. An extraorganizational professional virtual community can draw on an international pool of qualified and interested professionals. An intraorganizational virtual community, however, is limited by the number of employees. The ultimate number of participants needed for a virtual community has not been determined and likely reflects the goals of the group. As long as there is a core group of active members who regularly post information that is relevant and of interest to the membership pool, the professional virtual community will likely be successful.

Second, members of both intra- and extraorganizational professional communities are more likely to know each other FtF. This can increase social networking and is believed to increase employee and organizational performance by bringing in new information (Hampton & Wellman, 2001). However, it may also inhibit discussions and exchange of socioemotional support as members are concerned about saving face (Blanchard et al., 2010). Many professionals are already involved in online groups such as discussion lists in which colleagues share job announcements and request general information. There may be a bigger benefit (and risk) from being involved in virtual communities within which more valuable knowledge and support are created and exchanged, perhaps using

pseudonymous identities. More research is needed to provide practitioners with the appropriate advice on whether to encourage identities that are connected to a member's FtF identity or are pseudonymous.

Norms and sanctioning. A concern of many practitioners is regulating inappropriate behavior because of its potential to disrupt and potentially destroy the virtual community. Regulating behavior has long been an issue in online groups because of the ability of people to behave inappropriately with few repercussions. Formal policies include developing standards of behavior published in the group's FAQs as well as the presence of moderators in the discussion forums. Informal methods of sanctioning include technological features that allow members to "flag" other members to draw their inappropriate behavior to the moderator's attention. This allows administrators to warm, suspend, or kick out repeat offenders.

One important result of inappropriate behavior in a professional virtual community is that it can follow employees to their work life. This is easily accomplished if the virtual community identities are linked to FtF identities but may be more difficult if pseudonymous identities are used. Nonetheless, once members become attached to the virtual community, they may be less likely to engage in inappropriate behavior; sanctioning has an effect because members care what others think of them in the community (Blanchard et al., 2011).

Future Directions in Research and Practice

So what is the importance of professional virtual communities for I-O psychologists' future research and practitioner attention? First, technologically mediated communication is here to stay in organizations. Further, ICT affects a wide variety of employee experiences beyond virtual teams and the delivery of online training. Organizations and employees can take strategic advantage of the positive outcomes of these online groups and virtual communities as they become more pervasive.

We also have additional, important questions to answer to help organizations take full advantage of professional virtual communities, particularly, how successful virtual communities develop and what is the lifecycle of their members. Although the approach to virtual community development has certainly moved beyond "if we build it, they will come," the social processes, member characteristics, and key technological features that help a virtual community become viable have not been identified. Further, although we know lurkers predominate in virtual communities, we know less about why they maintain relationships to the virtual community and how they move to more active levels of participation.

An important challenge is that ICT research is inherently interdisciplinary. Along with the psychology and management literatures, communications studies, sociology and information science also provide a wealth of research on ICT and virtual communities. I-O psychologists may have to be more broad minded in their acceptance of epistemological assumptions, levels of theoretical explanation, and alternative methodologies (e.g., qualitative approaches). Practice theory, in which researchers and practitioners work together to understand and solve problems in "real world" organizations is gaining attention as a way to span the disciplines to incorporate the social processes and technological features in successful online groups (Feldman & Orlikowski, 2011).

Finally, employees' use of social media as well as communication through mobile devices is only beginning. These technologies make the boundaries of organizations more permeable and the difference between work and home and social and professional even more blurred. Although we cannot anticipate either the new technologies that will develop or how they will be used by employees, we can expect that ICT will be omnipresent in employees' work lives. Flexibility and openness to the new communication technologies will help us understand this important component of organizational and employee life.

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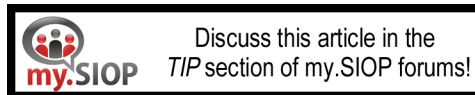
2012 Income and Employment Survey Results for the Society for Industrial and Organizational Psychology

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The survey's purpose was to collect information on 2012 income levels of industrial and organizational psychologists in SIOP. We also gathered employment and background variables that would help interpret income data. Survey instructions were emailed on January 7, 2013, to all Members, Associates, International Affiliates, and Fellows with active email addresses on record (*n* = 4,073; approximately 60 emails did not go through). The survey was electronically available until February 4, 2013. The number of individuals who responded was 1,298. After data cleaning and deleting cases for respondents who had not provided 2012 income, 1,225 cases remained. We used data from the 1,120 respondents who had indicated that they worked full-time for further analyses. This was the fourth SIOP income survey to be administered electronically. The response rate was 32.3%, as compared to 29.1% in 2009, and 34.2% in both 2006 and 2003.

Results

Summary
Key findings for unweighted 2012 data are as follows:

- Median incomes for the 2012 sample were generally higher than in 2009.
- Median income for women was 12.1% lower than that for men.
- Median income was highest for the over-55 age group.
- Median incomes for owners were higher than for non-owners.
- The highest median incomes were in Manhattan, followed by Other New York, San Francisco/San Jose, and Washington, D.C. metro areas.
- Median incomes for academics were significantly higher at business departments than at psychology departments.
- Median incomes for academics were significantly higher at departments that offered doctoral degrees than at those that offered master's or bachelor's degrees.
- The median contribution of an employer to defined contribution plans was 6.0% of income.
- The median amount to be provided by an employer through defined benefit plans was 50.0% of income.
- 45.1% of doctoral respondents in 2012 reported receiving a bonus. The most frequently awarded bonus was for individual performance, with a median of 4.0% of primary income.
- 60.9% of doctoral respondents reported receiving a pay raise in 2012. More than three-quarters of raises awarded were for the same job and employer, with a median increase of 3.0% of primary income.

Sample Characteristics
For the unweighted sample, percentages of respondents by type of employer (52.8% private sector [including self-employed], 34.3% academia, 7.8% public sector, and 5.1% nonprofits) were similar to those in the SIOP membership population in order of size of major sectors (45.9% private sector [including self-employed], 40.0% academia, 6.2% public sector, and 2.9% nonprofits). However, the private sector was somewhat overrepresented and academia somewhat underrepresented in the survey sample. Table 1 compares the 2012 sample to previous background variables.

Table 1

Characteristics of Samples Across Time (Cross-Sectional)

		1982	1988	1994	1997	2000	2003	2006	2009	2012	2003 weighted	2006 weighted	2009 weighted	2012 weighted
Gender														
	Men	84%	79%	71%	67%	65%	58%	58%	54%	56%	63%	62%	58%	59%
	Women	16%	21%	29%	33%	35%	42%	42%	46%	45%	37%	38%	42%	41%
SIOP membership type														
	Associate	n/a	10%	6%	7%	10%	12%	14%	14%	15%	9%	12%	12%	14%
	Member	n/a	82%	86%	86%	83%	82%	80%	80%	79%	81%	79%	79%	77%
	Fellow	n/a	8%	9%	7%	7%	6%	6%	6%	6%	10%	9%	9%	9%
Employment status														
	Full Time	n/a	87%	89%	86%	86%	95%	97%	95%	95%	94%	97%	95%	94%
	Part Time	n/a	5%	3%	8%	9%	5%	3%	5%	5%	6%	3%	5%	6%
Location														
	New York Area	4%	14%	11%	10%	11%	7%	8%	7%	6%	8%	9%	7%	7%
	Elsewhere	86%	86%	89%	90%	89%	93%	92%	93%	94%	92%	91%	93%	93%
Years since doctorate														
	0-<2	n/a	n/a	8%	11%	2%	11%	8%	9%	9%	6%	5%	6%	7%
	2-4	n/a	n/a	12%	13%	14%	19%	20%	16%	17%	12%	14%	13%	13%
	5-9	23%	24%	19%	18%	19%	25%	24%	22%	22%	20%	20%	19%	18%
	10-14	19%	24%	18%	14%	15%	13%	16%	18%	15%	15%	15%	16%	15%
	15-19	14%	24%	14%	14%	13%	10%	10%	10%	14%	12%	12%	12%	13%
	20-24	n/a	24%	14%	12%	14%	8%	7%	9%	7%	12%	11%	10%	9%
	25 or more	n/a	24%	15%	19%	25%	14%	15%	16%	18%	23%	23%	24%	25%
Degree														
	Doctorate	n/a	n/a	n/a	92%	88%	87%	87%	86%	83%	90%	89%	87%	85%
	Master's	n/a	n/a	n/a	7%	12%	13%	13%	14%	17%	10%	11%	13%	15%

Note. "n/a" indicates that data are not available. Statistics include both those with master's and doctorates, except for years since doctorate and the doctorate category in the degree variable, which only include those with doctorates. Doctorate includes those with Ph.D., Psy.D., J.D., Ed.D., and DBA. Master's includes those who have nearly completed doctorates, but had not yet graduated at the time of the survey. Weighting in the last four columns is based on years since highest degree in the SIOP membership population.

Table 2

Demographic Comparison of Median Primary Incomes for Selected Subgroups by Year

		1982	1988	1994	1997	1999	2000	2002	2003	2005	2006	2008	2009	2011	2012
Degree															
	Doctorate	$42,850	$60,000	$71,000	$80,000	$83,000	$90,000	$83,750[a]	$87,714[a]	$92,000[a]	$98,500[a]	$102,000[a]	$105,000[a]	$110,000	$113,200
		(844)	(1,448)	(1,124)	(1,231)	(882)	(905)	(904)	(922)	(931)	(942)	(869)	(904)	(921)	(938)
								$93,000	$96,295	$99,000	$103,000	$110,000	$112,728	$115,000	$119,568
	Master's	$43,000	$51,500	$59,500	$55,000	$58,000	$67,000	$60,000[a]	$65,000[a]	$68,000[a]	$72,000[a]	$72,000[a]	$74,500[a]	$75,000	$80,750
		(96)	(171)	(104)	(99)	(117)	(126)	(131)	(133)	(139)	(141)	(141)	(148)	(175)	(182)
								$67,096	$68,000	$72,000	$79,855	$75,918	$77,591	$76,015	$82,382
Gender[b]															
	Men	$44,250	$62,000	$75,000	$83,000	$85,000	$93,000	$86,250[a]	$92,000[a]	$95,000[a]	$100,000[a]	$108,000[a]	$110,000[a]	$110,800	$113,800
		(811)	(1,290)	(954)	(858)	(637)	(653)	(605)	(609)	(626)	(626)	(556)	(569)	(613)	(624)
								$96,000	$100,000	$102,664	$125,062	$115,000	$119,000	$119,903	$120,677
	Women	$36,000	$50,000	$58,500	$65,000	$70,000	$77,000	$72,000[a]	$76,000[a]	$78,000[a]	$85,000[a]	$90,000[a]	$92,000[a]	$94,000	$100,000
		(150)	(342)	(394)	(428)	(341)	(357)	(428)	(444)	(436)	(449)	(451)	(480)	(475)	(490)
								$80,000	$83,400	$81,452	$88,471	$94,000	$95,000	$97,798	$103,000
Age[c]															
	<35	$33,000	$45,000	$50,000	$60,000	$62,000	$70,000	$60,753[a]	$70,000[a]	$72,000[a]	$80,000[a]	$78,500[a]	$83,000[a]	$84,000	$89,000
		(148)	(132)	(168)	(236)	(163)	(170)	(194)	(208)	(205)	(209)	(204)	(221)	(205)	(220)
								$62,930	$70,000	$72,000	$80,000	$79,570	$83,427	$84,000	$88,954
	35-39	$40,000	$55,000	$61,000	$70,000	$75,000	$80,000	$76,250[a]	$80,300[a]	$90,000[a]	$95,000[a]	$98,500[a]	$104,000[a]	$100,000	$110,000
		(193)	(280)	(227)	(178)	(136)	(141)	(208)	(209)	(198)	(200)	(168)	(169)	(163)	(169)
								$79,139	$83,000	$90,000	$95,000	$99,220	$104,000	$100,000	$110,000
	40-44	$45,500	$60,000	$75,000	$80,000	$78,000	$82,000	$85,000[a]	$89,600[a]	$91,759[a]	$97,000[a]	$108,000[a]	$110,000[a]	$120,000	$129,000
		(152)	(329)	(216)	(162)	(95)	(100)	(137)	(141)	(139)	(141)	(149)	(155)	(151)	(151)
								$86,000	$89,694	$96,000	$100,000	$108,000	$110,000	$125,000	$130,220
	45-49	$50,000	$65,000	$84,000	$100,000	$95,000	$99,500	$95,500[a]	$100,000[a]	$100,000[a]	$105,000[a]	$125,000[a]	$116,500[a]	$128,000	$130,000
		(92)	(262)	(247)	(210)	(141)	(140)	(91)	(90)	(105)	(107)	(89)	(95)	(118)	(122)
								$96,000	$100,000	$99,318	$102,126	$125,000	$116,500	$128,000	$130,000
	50-54	$53,000	$65,000	$85,000	$91,500	$91,000	$100,500	$110,000[a]	$112,500[a]	$108,000[a]	$115,000[a]	$118,000[a]	$125,000[a]	$132,000	$134,000
		(91)	(144)	(140)	(196)	(140)	(144)	(121)	(120)	(103)	(104)	(79)	(79)	(78)	(77)
								$115,497	$118,112	$109,854	$120,000	$120,000	$126,143	$133,811	$137,320
	55+	n/a	n/a	n/a	$92,000	$100,000	$100,000	$110,659[a]	$110,000[a]	$129,500[a]	$131,306[a]	$140,000[a]	$140,000[a]	$139,700	$148,350
					(242)	(189)	(192)	(143)	(144)	(170)	(170)	(168)	(173)	(188)	(185)
								$111,000	$110,000	$135,000	$134,940	$140,095	$144,000	$143,000	$150,000

[a] The top row contains income based on unweighted data; numbers in parentheses in the second row are sample sizes; numbers under sample sizes are based on weighting by years since highest degree in the SIOP membership population.
[b] Includes all respondents regardless of degree.
[c] Includes only respondents with a doctorate.

Percentages by type of SIOP membership on the 2012 survey were similar to those for the 2009 survey, as well as to types of membership within SIOP as a whole (15.1% of SIOP members are Associates, 78.5% are Members or International Affiliates, and 6.3% are Fellows).

Table 1 indicates a couple of different trends in samples before and after 2003. For example, percentages of the sample working part time and respondents living in the New York City metro area fell in 2003 and have maintained approximately the same proportion since then. In addition, percentages of respondents with master's degrees have been gradually increasing over the years. These figures are similar to those in the current SIOP membership population—83.1% of SIOP members have doctorates and 16.8% have master's degrees.

Sample weighting. About half the SIOP membership (49.4%) earned their highest degrees in or before 1999 (as compared to 40.3% for the survey sample) and about a quarter (25.5%) in or before 1989 (as compared to 17.9% of the survey sample). Given these differences, we ran analyses with the 2012 data as well as with 2012 data weighted to have similar percentages by years since highest degree as in the current SIOP membership (using simulated replication with the weight command in SPSS).

Years since highest degree is one of the five variables on which data are available for the current SIOP membership population. It was selected as the weighting variable as it is significantly correlated ($r = .43$, $p < .001$, two-tailed) with 2012 primary income and has the highest correlation among all variables on which we have data for both the respondents as well as the SIOP membership. (The other variables are SIOP membership status, highest degree received, and employment sector.) Years since highest degree was also highly correlated with other variables that were significantly related to 2012 primary income for which we do not have SIOP membership data—.90 with years of work experience in industrial and organizational psychology, .89 with age, .55 with academic job level, .54 with tenure, and .43 with practitioner job level (all significant at $p < .001$, two-tailed).

Weighted results generally provide a better representation for the SIOP membership population; however, we also present unweighted results for comparison. Weighting aligned the distribution of respondents who received their highest degree after 1999 with the SIOP population (49.4% in the SIOP membership, 40.3% in the unweighted survey data, and 49.4% with weighted data).

Income Levels

Highest degree obtained. Respondents were asked to provide their 2011 and 2012 total salary or personal income, not including bonuses or other variable pay, from their primary employer. Table 2 presents unweighted data above the sample size in parentheses and weighted data below the sample size. Median unweighted and weighted incomes for respondents with doctoral and master's degrees were higher in 2011 and 2012 than in 2009, with one exception: weighted 2011 income for those with a master's degree was lower in 2011 than in 2009.

Gender. For unweighted data, Table 2 shows that median primary income for women was 15.2% lower than that for men in 2011 and 12.1% lower in 2012. The income of women respondents has consistently been lower than that of men. However, the gap is narrowing, and it was the narrowest yet in this year's survey. Since 1982, the gap between the median income for men and women ranged from 22.0% in 1994 to 12.1% in 2012.

The mean unweighted primary income for women in both 2011 and 2012 ($105,740 and $111,412, respectively) was significantly lower ($t(1,078) = 6.07$, $p < .001$, two-tailed, unequal variances and $t(1,094) = 5.93$, $p < .001$, two-tailed, unequal variances, respectively) than the mean primary income for men ($130,676 in 2011 and $135,896 in 2012). The mean income for women was 19.1% lower than that for men in 2011 and 18.0% lower in 2012. In surveys since 1997 (the year from when mean data are available), the difference between the mean incomes of men and women ranged from 40.6% in 1997 to 18.0% in 2012.

Weighted medians (shown under the sample size for years from 2002 to 2012 in Table 2) were higher for both men and women in 2011 and 2012 than unweighted medians. Weighted mean incomes were also higher for both men ($138,480 in 2011 and $143,638 in 2012) and women ($109,211 in 2011 and $114,843 in 2012) than unweighted means. Based on weighted data, women's median incomes were 18.4% lower than median incomes for men for 2011 and 14.6% lower for 2012, and their means were 21.1% lower for 2011 and 20.0% lower for 2012.

Some of these discrepancies in income may be explained by gender differences in other areas. For instance, men were more likely to have doctoral degrees than women (47.6% vs. 35.8%, $p < .05$). However, even at the same degree level, mean income for men was significantly higher than that for women ($p < .001$ for PhDs, $p < .05$ for masters). Men also tended to have earned their highest degrees earlier than women and have greater experience in men had received

Their highest degree. 14.8 years ago, as compared to 9.8 years for women. The mean length of experience for men was 16.9 years and for women, 12.3 years.

   Age. As Table 2 shows, unweighted median primary income was highest for the over-55 age group. Unweighted median incomes for all age groups were higher in 2011 and 2012 than what they had been in 2009, with one exception: For the 35-39 age group, median income in 2011 was less than that in 2009. In comparing unweighted and weighted medians by age for 2011 and 2012, half the weighted medians are higher than the unweighted medians—for the 40-44, 50-54, and 55+ age groups. For the remaining age groups, the weighted medians are about the same as the unweighted medians.

   In the remainder of this report, results from analyses on income by job characteristics, employer type, or location are only presented for 2012 income because we did not collect descriptive data on these variables for 2011 and cannot assume that such characteristics were the same for both 2012 and 2011.

   Years since doctorate. Figure 1 shows weighted 2012 incomes from the primary employer for respondents with doctorates by the number of years since they received their degree. Respondents who received doctorates 25 years ago or more had the highest median ($151,257) as well as the highest mean income ($181,952). Results are similar for weighted and unweighted data.
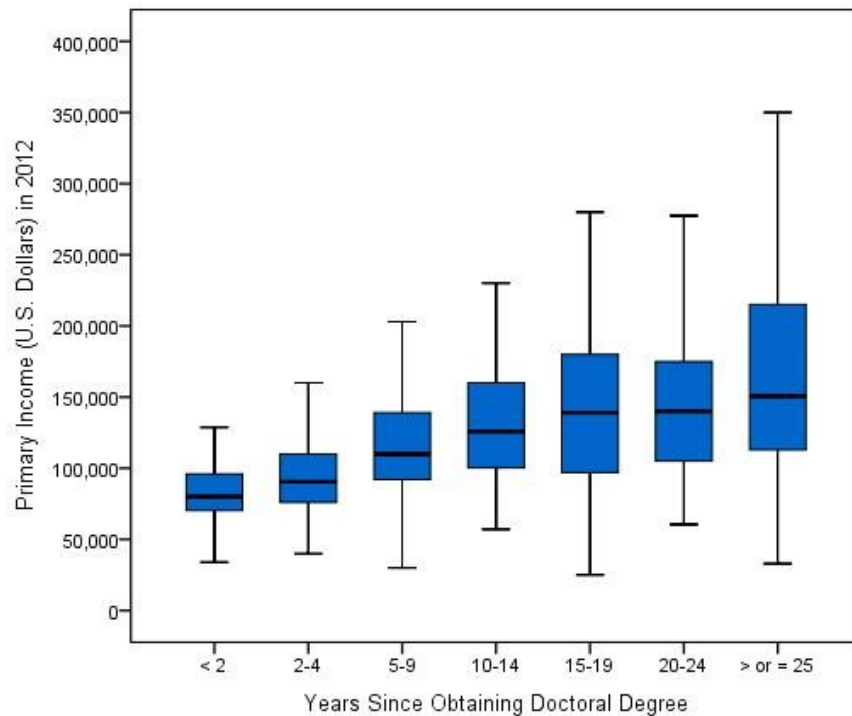
	<2	2-4	5-9	10-14	15-19	20-24	25+
n:	63	127	174	150	123	83	223
Percentile:							
90th	$118,247	$137,002	$171,757	$194,300	$252,468	$230,462	$315,000
75th	95,948	110,000	139,000	160,000	181,106	178,618	214,247
50th	80,103	90,790	110,000	125,846	139,412	141,016	151,257
25th	70,384	76,000	921,42	100,319	97,384	105,045	113,000
10th	57,667	62,034	69,242	80,316	72,000	83,587	92,162
Mean:	86,560	95,466	120,586	131,967	152,624	151,874	181,952

Figure 1: **Descriptive Statistics Representing 2012 Primary Income as a Function of Years Since Obtaining a Doctorate, Based on Weighted Data**

Geographic location of employment. Specific metro areas listed on the survey were chosen because they are typically the highest paid in the U.S. With unweighted data, Manhattan had the highest 2012 median income ($160,000) for respondents with doctorates, followed by Other New York ($149,000), Washington, D.C. ($128,492), and San Francisco ($127,000) metro areas. With weighting (Figure 2), medians for all areas went up, except for respondents from the Philadelphia and San Diego metro areas. Los Angeles/Orange County metro and Boston metro areas were among the four areas with the top median incomes in 2009, but they dropped to eighth and ninth place, respectively, in the 2012 survey. More than three-fourths of respondents from Canada are from metropolitan areas. As the number of cases in each city was too small to report, they were merged into a single category.

Type of principal employment. Of respondents with doctorates, the two largest employers were universities or colleges (40.2%, *n* = 377) and private-sector consulting firms (22.2%, *n* = 208), together accounting for a little less than two-thirds of the respondents. With unweighted data, independent consultants earned the highest income, followed by respondents in pharmaceuticals, private-sector healthcare, and manufacturing. With weighting, the two biggest employer categories were still universities and colleges (41.9%) and private-sector consulting organizations (20.9%). The top four types of employers maintained the same ranks with weighted data (see Figure 3).
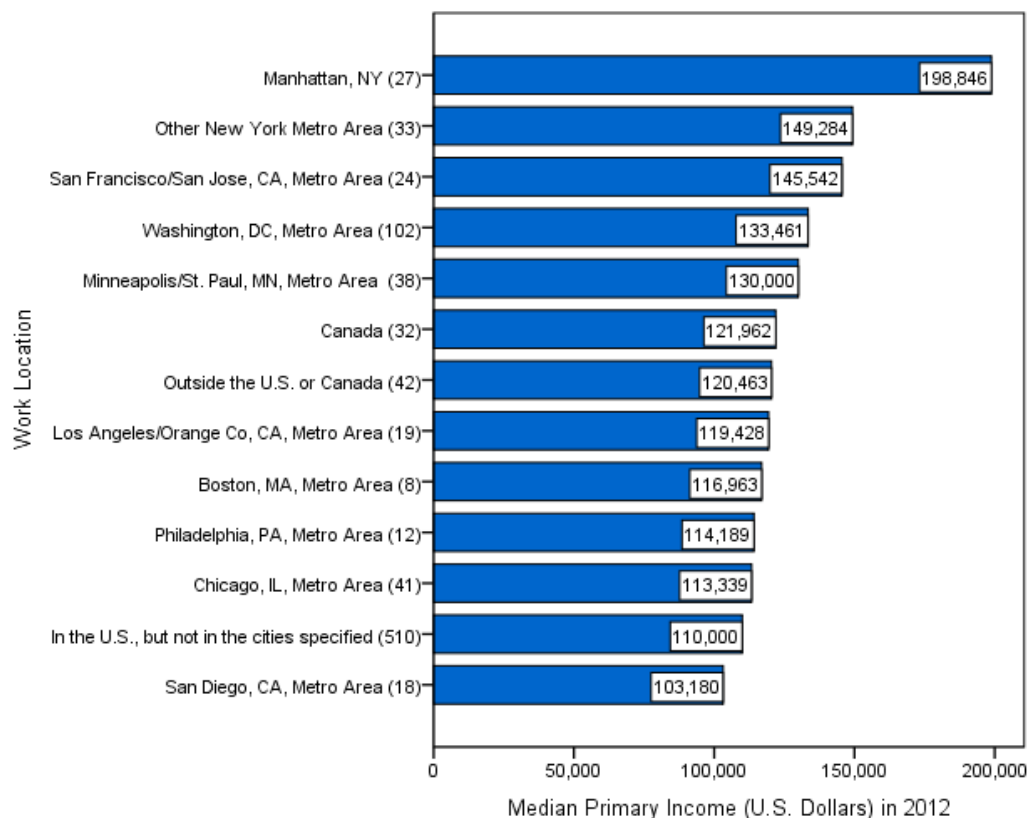
Note. Doctoral respondents only. Sample sizes by location are in parentheses.

Figure 2. **2012 Median Primary Income for Doctorates as a Function of Location, Based on Weighted Data**
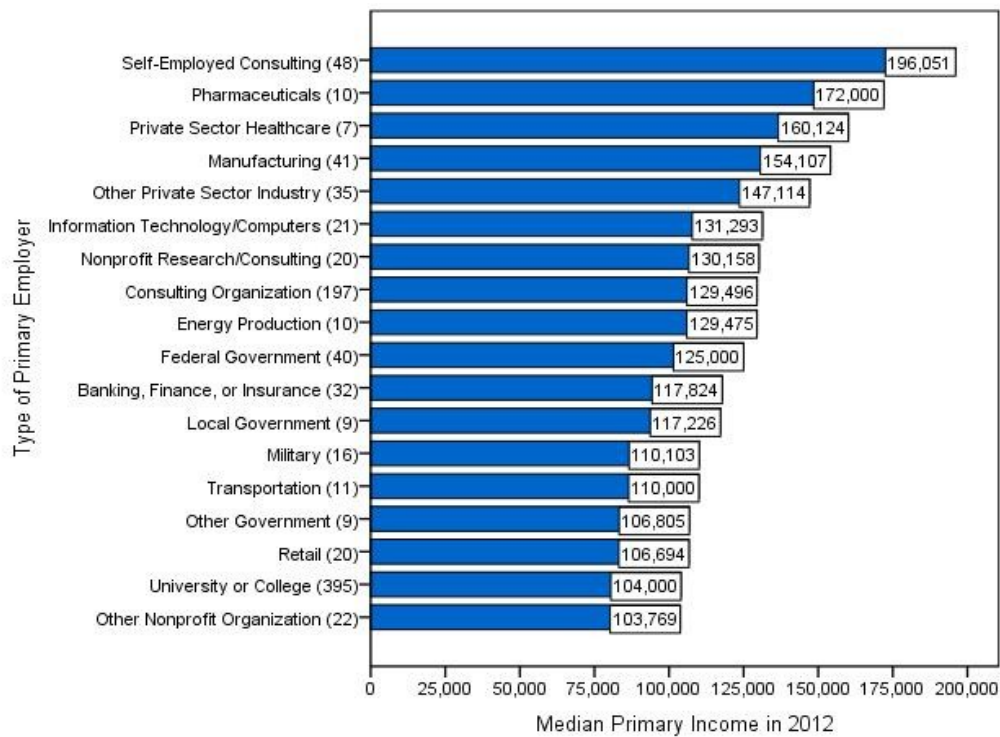
Note. Doctoral respondents only. Sample sizes by type of employer are in parentheses.

Figure 3. **2012 Median Primary Income for Doctorates by Type of Primary Employer, Based on Weighted Data**

Type of academic employment. For those working in universities or colleges, the unweighted mean income differed by the highest degree a department offered (bachelor's $87,628, $n = 40$; master's $100,091, $n = 102$; doctorate $123,345, $n = 226$; $F(2,365) = 11.57$, $p < .001$). In addition, the unweighted mean income of respondents working at business or management departments ($141,803, $n = 150$) was significantly ($F(1,332) = 86.03$, $p < .001$) higher than the mean income of those in psychology departments ($91,216, $n = 184$). Table 3 presents unweighted and weighted mean and median incomes at psychology and business or management departments based on highest degree offered. The unweighted mean income did not differ significantly ($F(1,372) = .07$, $p = .79$) for private ($113,265 $n = 101$) and public institutions ($111,602, $n = 273$).

Table 3

Mean and Median Primary Incomes for Academics by Department and Type of Degree Offered

	Unweighted data					
	Psychology			Business or Management		
	Means	Medians	N	Means	Medians	N
Highest degree offered						
Bachelors	$80,073	$72,000	24	101,312	$94,050	14
Masters	$68,481	$65,000	32	$118,281	$104,434	62
PhD or equivalent	$98,989	$85,324	128	$169,172	$154,750	74

	Weighted data					
	Psychology			Business or Management		
	Means	Medians	N	Means	Medians	N
Highest degree offered						
Bachelors	$83,457	$73,832	25	$100,323	$93,998	13
Masters	$71,106	$66,900	33	$123,198	$107,000	65
PhD or equivalent	$106,175	$93,000	136	$179,405	$160,000	79

Academic titles by department type. Figure 4 shows weighted 2012 income for psychology and business/management departments for the five academic titles that had adequate sample sizes. Tables accompanying Figure 4 present both unweighted and weighted results. Distinguished or chaired professors had the highest median and mean income in both types of departments. There were significant differences between incomes in psychology and business/management departments for assistant professors, associate professors, full professors, and distinguished or chaired professors. Table 4 presents the ANOVA results by department for each title.
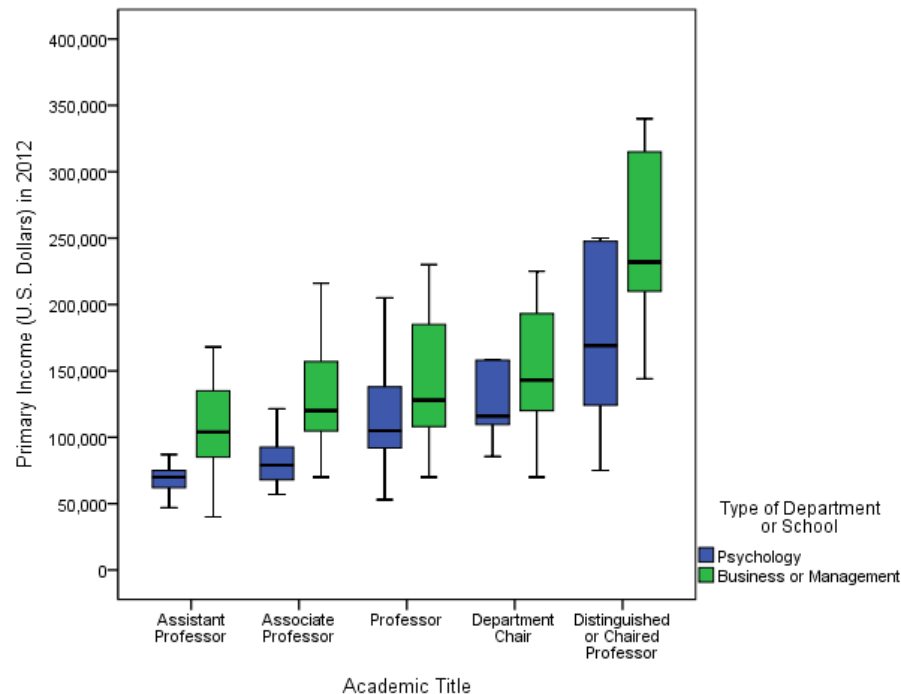
Unweighted Data					
Psychology					
	Assistant Professor	Associate Professor	Professor	Department Chair	Distinguished or Chaired Professor
n:	63	50	48	10	8
Percentile:					
90th	$84,360	$112,300	$171,200	$255,200	a
75th	75,000	90,625	136,000	144,500	234,488
50th	68,500	78,000	103,773	115,000	146,580
25th	61,000	66,250	84,250	104,450	102,000
10th	53,493	60,000	66,488	85,850	a
Mean:	68,070	83,004	110,982	131,710	159,601
Business or Management					
	Assistant Professor	Associate Professor	Professor	Department Chair	Distinguished or Chaired Professor
n:	53	40	27	11	15
Percentile:					
90th	$155,700	$195,475	$229,200	$219,000	$331,270
75th	135,500	157,375	185,000	193,164	315,000
50th	104,000	134,746	128,000	143,000	232,000
25th	85,500	104,217	106,000	99,500	203,000
10th	75,400	90,698	91,100	74,400	153,600

	Assistant professor	Associate professor	Professor	Department chair	Distinguished or chaired professor
			Weighted Data		
			Psychology		
n:	52	53	62	11	10
Percentile:					
90th	$84,694	$113,000	$170,341	$266,000	249,596
75th	75,000	93,079	138,000	190,794	247,651
50th	69,652	78,848	105,000	120,153	176,592
25th	61,871	67,686	87,776	109,623	121,302
10th	54,019	60,000	66,885	86,551	82,196
Mean:	68,470	83,911	112,045	147,980	171,573
			Business or Management		
	Assistant professor	Associate professor	Professor	Department chair	Distinguished or chaired professor
n:	43	41	37	12	20
Percentile:					
90th	$159,557	$194,685	$229,806	$214,179	$335,062
75th	135,969	157,124	185,000	193,407	316,112
50th	104,181	122,656	128,000	143,000	233,525
25th	84,939	104,252	107,054	107,607	209,259
10th	75,313	91,681	93,567	70,000	160,000
Mean:	110,153	134,568	151,906	146,828	249,574

aNot enough cases to report.

Figure 4. **2012 Primary Income by Type of University or College Department and Academic Title, Based on Unweighted and Weighted Data.**

Table 4

ANOVAs for Academic Titles by Department Type

	Unweighted			Weighted		
	df	F	p	df	F	p
Academia title						
Assistant professor	1	84.79	.000	1	67.28	.000
	114			93		
Associate professor	1	53.57	.000	1	52.38	.000
	88			93		
Professor	1	10.75	.002	1	15.17	.000
	73			97		
Distinguished or chaired professor	1	9.06	.007	1	11.06	.002
	21			28		

Practitioner job titles. Figure 5 shows weighted 2012 primary income by job level for doctoral degree respondents in the private, nonprofit, and government sectors. Tables accompanying the figure show unweighted and weighted percentiles. Almost two-thirds of the weighted means and medians are higher than unweighted means and median. Senior vice-presidents had the highest mean and median incomes in both unweighted and weighted data. To view this data in context, note that 83.9% of presidents and CEOs in this subsample work in organizations that have less than 15 employees, 9.7% work in organizations with 16 to 100 employees, and the largest organization for which a respondent is president or CEO has 1,501 to 3,000 employees. Only 21.1% of the senior vice-presidents, on the other hand, work in organizations with less than 15 employees, 47.4% work in organizations with over 3,000 employees, and the largest organization that a respondent is senior vice-president of has more than 75,000 employees.

Figure 5. **2012 Primary Income in Private-Sector, Nonprofit, and Government Organizations by Job Level, Based on Unweighted and Weighted Data**

Unweighted Data

	Entry-Level Consultant/ Researcher/ Practitioner	Consultant/ Researcher/ Practitioner	Consultant/ Researcher/ Practitioner	First-Line Supervisor	Manager/ Director HR/OB Area	Manager/ Director Non-HR/ OB Area	Vice President	Senior Vice President	President or CEO
n:	17	99	169	46	105	23	40	19	31
Percentiles:									
90th	$98,000	$155,500	$165,000	$160,450	$203,600	$180,000	$278,500	$400,000	$390,000
75th	84,000	116,000	135,250	141,000	166,415	160,000	243,750	340,000	250,000
50th	77,368	96,000	110,000	121,250	140,000	133,200	202,500	222,000	196,000
25th	71,406	80,600	95,000	103,625	120,000	112,000	172,000	182,500	125,000
10th	51,000	75,000	88,000	88,500	105,058	97,000	160,500	137,000	60,000
Mean:	77,408	117,449	121,390	122,400	148,642	137,648	215,750	265,763	208,831

Weighted Data

	Entry-Level Consultant/ Researcher/ Practitioner	Consultant/ Researcher/ Practitioner	Consultant/ Researcher/ Practitioner	First-Line Supervisor	Manager/ Director HR/OB Area	Manager/ Director Non-HR/ OB Area	Vice President	Senior Vice President	President or CEO
n:	13	93	160	42	102	24	42	23	37
Percentiles:									
90th	$103,127	$170,000	$177,191	$159,721	$209,079	$180,000	$274,536	$400,000	$400,000
75th	84,451	130,000	139,000	142,474	167,554	170,000	225,000	346,583	250,000
50th	77,845	99,514	113,874	123,000	140,000	139,509	200,000	217,500	198,096
25th	71,871	83,389	97,555	104,000	120,000	119,224	172,000	175,500	125,000
10th	52,546	75,000	90,000	89,531	106,605	100,232	160,584	134,985	89,552
Mean:	77,369	125,254	126,283	123,237	149,006	142,461	212,587	264,165	215,465

Status as a partner, principal, or owner. Overall, 4.5% of the respondents were sole proprietors or owners, 1.6% partners, 1.2% principals, 0.5% primary shareholders (i.e., owners of 20.0% or more of a corporation), and 1.2% were minority shareholders (i.e., owners of less than 20.0% of a corporation). Owners had higher mean and median primary incomes than nonowners for both unweighted and weighted data (see Figure 6). With weighting, both means and medians increased for most types of owners as well as nonowners. (Only respondents in private sector for-profit industries were asked about their ownership status; income data from nonprofit and government respondents are presented for comparison.)
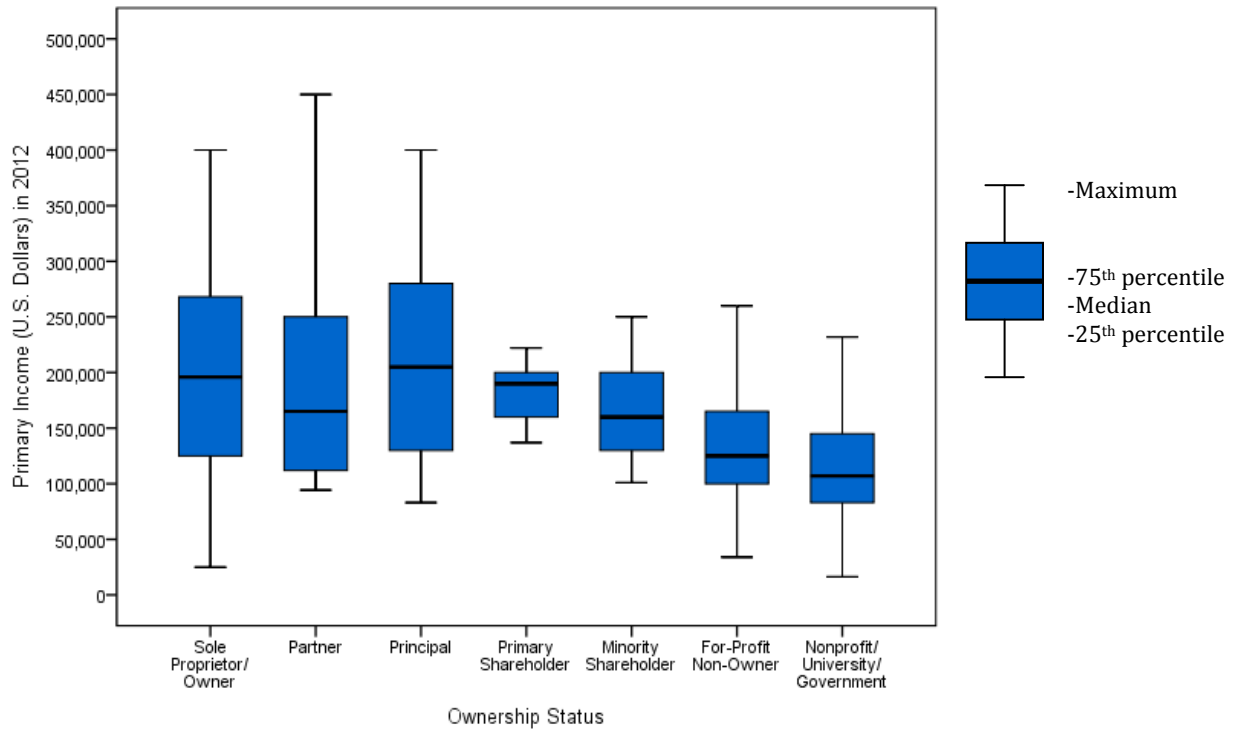
Unweighted data

	Sole proprietor		Partner	Principal	Primary shareholder	Minority shareholder	Private-sector nonowner	Nonprofit/university/ government
n:	42		15	11	5	11	304	493
Percentiles								
90th	$385,000		$360,000	$384,000	a	$241,000	$209,500	$175,600
75th	258,250		250,000	280,000	211,000	200,000	159,500	138,000
50th	183,000		165,000	205,000	190,000	151,000	119,701	102,546
25th	118,750		112,000	130,000	148,500	130,000	968,09	78,511
10th	46,500		97,694	90,400	a	104,800	82,000	64,700
Mean:	209,851		191,574	212,091	181,800	161,727	139,187	114,401

Weighted data

	Sole proprietor		Partner	Principal	Primary shareholder	Minority shareholder	Private-sector nonowner	Nonprofit/university/ government
n:	50		16	11	5	11	283	511
Percentiles								
90th	$400,000		$425,034	$399,873	a	$240,847	$210,000	191,571
75th	270,803		250,000	280,000	209,128	200,000	165,000	145,000
50th	196,021		165,000	201,000	190,681	156,349	125,000	107,000
25th	122,888		113,980	135,810	149,324	130,000	100,000	82,651
10th	50,000		96,841	95,776	a	104,672	850,000	67,000
Mean:	219,977		197,746	214,545	182,270	164,356	145,420	120,435

aNot enough cases to report.

Figure 6. **2012 Primary Income by Ownership Level, Based on Unweighted and Weighted Data**

Starting salaries. With unweighted data from those who had hired new graduates in 2012 and reported the average salary of these new hires, the mean and median starting salary was:

Doctoral graduates in industrial-organizational psychology: mean $81,815 and median $78,000 (*n* = 60).
Master's degree graduates in industrial-organizational psychology: mean $65,521 and median $64,000 (*n* = 47).
Doctoral graduates in human resources/organizational behavior: mean $87,704 and median $83,000 (*n* = 10).
Master's degree graduates in human resources/organizational behavior: mean $95,901 and median $80,000 (*n* = 9).

The HR/OB results need to be interpreted with caution because sample sizes are small and the respondents hiring these graduates have distinct characteristics. For instance, most master's degree graduates were hired into private sector organizations and about half their supervisors were located in major metropolitan areas in the U.S., whereas most doctoral graduates were hired into universities not in the metropolitan areas, with a third outside the U.S. and Canada. When converting from another currency, several factors, including the current conversion rate with the U.S. come into play, and a simple conversion may not truly be reflective of the purchasing power of the income in that country. In such a small sample, these factors may exert a disproportionate influence upon mean income levels.

For 19 respondents who self-reported that they had obtained a doctorate in the past year and had a year or less of work experience in industrial-organizational psychology or a related field, the 2012 unweighted mean primary income was $80,912 and median was $75,000. This subsample was overwhelmingly tilted towards academia, with 15 respondents working at a university or college, only one in the federal government, and three in consulting firms. There were very few cases in a comparable subgroup with a master's degree, so their income is not reported.

Retirement, Bonus, and Raise Information

Retirement plans. The survey asked about two types of plans that employers use to fund retirement systems: defined contribution and defined benefit. In defined contribution plans, employers typically annually contribute a specified amount of money or percent of salary into a retirement account, and it is invested until an employee retires. In the U.S., 401k and 403b plans are defined contribution plans. With a defined benefit plan, an employer typically agrees to pay the employee a certain amount or percentage of salary once the employee retires.

For 2012, 81.6% (*n*=765) of doctoral respondents indicated that their employer offers a defined contribution plan, while 29.1% (*n* = 273) indicated that their employer provides a defined benefit plan. For 480 respondents who reported the percentage of income that their employer contributed to a defined contribution plan in 2012, the unweighted mean amount contributed was 6.4% and median was 6.0%; the weighted mean was 6.6% and median was 6.0%. For 43 doctoral respondents who reported the percentage of final salary that their employer will provide after they retire through a defined benefit plan, the unweighted mean amount was 45.3% and median was 50.0%; the weighted mean was 46.8% and median was 54.1%.

Bonuses and stock options. Overall, 45.1% of doctoral degree respondents in 2012 reported receiving a bonus. The percentage of respondents in each sector who reported receiving a bonus in 2012 was:

- Private sector: 76.8%
- Nonprofit: 58.1%
- Government and military: 45.8%
- University or college: 13.5%
- Self-employed: 7.5%

Bonuses organized in order of the frequency with which they were offered were as follows. (Note that some individuals received more than one type of bonus.)

- Individual bonus: 31.7%
- Organizational bonus: 26.0%
- Group, department, or unit performance bonus: 14.2%
- Retention bonus: 2.0%
- Special project bonus: 1.9%
- Signing or recruiting bonus: 1.5%
- Exercising stock options: 0.7%

- Obtaining a certification: 0.1%
- Other reasons: 2.0%

To examine bonus size (as a percent of reported 2012 primary income) by type, we examined data from 218 respondents with doctoral degrees who reported that they received only a single type of bonus. The average size of each type of bonus was:

- Individual performance bonus: 9.4% mean and 4.0% median unweighted (n = 107); 10.1% mean and 4.1% median weighted (n = 104).
- Group, department, or unit performance bonus: 8.2% mean and 5.0% median unweighted (n = 7); 8.8% mean and 5.4% median weighted (n = 6).
- Organizational performance bonus: 12.7% mean and 7.3% median unweighted (n = 62); 13.3% mean and 8.0% median weighted (n = 59).
- Special project bonus: 9.3% mean and 10.1% median unweighted (n = 7); 8.6% mean and 8.5% median weighted (n = 7).
- Retention bonus: 8.0% mean and 8.8% median unweighted (n = 7); 8.2% mean and 8.8% median weighted (n = 6).
- Sign on or recruiting bonus: 8.3% mean and 8.0% median unweighted (n = 7); 7.9% mean and 7.9% median weighted (n = 6).
- Other bonuses: 12.0% mean and 3.0% median unweighted (n = 13); 10.8% mean and 2.9% median weighted (n = 15).

Too few respondents (n < 5) reported receiving a bonus in the form of stock options or for receiving a degree or a certification, so their data are not described.

Pay raises. A little less than two-thirds (60.9%) of respondents with doctoral degrees reported receiving a pay raise in 2012. The average size of each type of pay raise for those with doctoral degrees (as a percent of base salary before the raise) was:

- A promotion with the same employer: 10.1% mean and 9.6% median (n = 72) unweighted; 10.2% mean and 9.7% median (n = 68) weighted.
- An increase in responsibility with the same employer: 10.1% mean and 8.0% median (n = 17) unweighted; 10.2% mean and 8.0% median (n = 15) weighted.
- The same job at the same employer: 4.0% mean and 3.0% median (n = 417) unweighted; 3.9% mean and 3.0% median (n = 418) weighted.

There were too few respondents (n < 5) who received pay raises for a similar job at a new employer, a higher level job at a new employer, a transfer to another job or location at the same employer, or for other reasons, to summarize their data.

Regression Analyses

We analyzed the relationships of personal and employment characteristics to income from the primary employer using unweighted data in separate regression equations for respondents working in universities or colleges and those working for nonacademic employers because we had collected data on several different variables for the two groups (e.g., type of academic department for those in academia, appropriate job levels for the two groups, and ownership status for practitioners). The equation for the academic sample accounted for more variance in 2012 income from the primary employer (R^2=.69, R^2_{adj}=.66, $F(36,310)$=19.42, p < .001) than the equation for the practitioner sample (R^2=.50, R^2_{adj}=.46, $F(48,584)$=11.97, p < .001).

For the academic sample, coefficients were significantly positive (p < .05) for working in a business/management department or an industrial relations department (compared to a psychology department); years since obtaining one's highest degree; being a SIOP Fellow (compared to a SIOP member); being a distinguished/chaired professor or an assistant/associate dean or a dean (compared to an assistant professor); working in the Los Angeles/Orange County metro area (compared to areas not listed on the survey that are in the U.S.); and number of employees supervised. Coefficients were significantly negative related to income (p < .05) for working in departments where the highest degree offered was either a bachelor's or a master's (compared to a doctorate), years of work experience in I-O psychology, and number of years worked for the current employer.

In the equation for practitioners, coefficients were significantly positive ($p < .05$) for years of work experience in I-O psychology or a related field; years since highest degree; having a doctorate (compared to a master's degree); number of hours worked per week for the primary employer; working in Manhattan or Other New York metro area (compared to areas not listed on the survey that are in the U.S.); being a vice president, senior vice president, or a president/CEO; being a SIOP Fellow (compared to a SIOP member). Considering Division 14 to be one's primary division in APA had significant negative coefficients ($p < .05$) with income.

Although the R^2 for the equation for academics was only slightly lower than that in 2009 ($R^2 = .72$, $R^2_{adj} = .68$, $F(34,278) = 20.54$, $p < .001$), there were a few unexpected results. For instance, for the academic sample, the number of years of work experience in I-O psychology had a significant negative coefficient with income. We explored the possibility that the high degree of intercorrelation among some of the variables included in the regression equation (years since highest degree and years of work experience $r = .90$; years since highest degree and age $r = .89$; and years of work experience and age $r = .87$) led to this result. With age and years of work experience removed from the equation for academics, we found that the number of years of work experience was not related to income in the regression equation. Another seemingly unexpected finding in the academic sample, that type of degree was not significant, has a clearer explanation. Only 2.9% of this sample did not have a doctoral degree so there was little variance on this variable.

For practitioners, considering Division 14 to be one's primary APA division was negatively related to income. Again, lack of variance might account for this. Out of the practitioners who answered the question, 9.3% said they were not APA members, 86.8% said Division 14 was their primary APA division, and only 3.9% said Division 14 was not their primary APA division. The other unexpected finding for practitioners is that no specific employer industry was significantly related to income.

Discussion

The 2012 survey was the fourth SIOP Income and Employment Survey to be administered via the Internet. The 2012 response rate (32.3%) was a little higher than that for the previous survey (29.1%). The proportion of female respondents in this survey (44.5%) is about the same as the previous survey. The percent of respondents with a master's as their highest degree has been increasing over the years and was the highest yet this administration, at 16.7% in 2012, compared to 7.0% on the 1997 survey. Because the distribution of respondents by years since highest degree varied from the SIOP population, we weighted the responses by this variable and presented both unweighted and weighted results. Comparing weighted medians, we found that primary income for those with doctorates increased for each year in which it has been measured since 2002. However, for those with a master's as the highest degree, median income dipped in 2008, 2009, and 2011, before rising again in 2012.

The 18.4% lower weighted median income for women than men in 2012 suggests that there continues to be a wage gap between women and men. However, gender was not statistically significant ($p < .05$) in the regression equations for academics and practitioners that included gender with other independent variables. This is consistent with findings from the 2001, 2006, and 2009 surveys (gender was significant in regression equation in the 1998 and 2003 surveys). In addition, the difference between incomes for men and women has been narrowing over the years, and it was the lowest so far in this year's survey.

For academics, regression results suggest that such factors as type of department, years since highest degree, SIOP membership status, job level, location, number of employees supervised, and highest degree offered by the department were significant predictors of primary income. For practitioners, such factors as years of work experience, years since highest degree; type of degree, number of hours worked, location, job level, and SIOP membership status were significant predictors of income.

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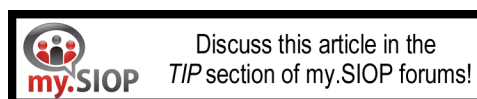
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Insufficient Effort Responding to Surveys as a Threat to Validity:
The Perceptions and Practices of SIOP Members

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To properly test a theoretical model or provide empirically driven solutions to organizational problems, I-O researchers must collect *valid* data. Needless to say, maximizing validity is an explicit goal of research methodology, and very few SIOP members would dispute the importance of validity. It is possible, however, that even when researchers use measures that are *generally* valid, a subset of participants may still fail to provide valid data. This possibility is reflected in several mature research areas including social desirability (Ones, Viswesvaran, & Reiss, 1996), faking (Mueller-Hanson, Heggestad, & Thornton, 2003), and the "nuisance" effects of trait negative affectivity (Spector, Zapf, Chen, & Frese, 2000). We believe that insufficient effort responding (IER; Huang, Curran, Keeney, Poposki, & DeShon, 2012)—a largely overlooked behavior and the focus of this paper—poses yet an additional threat to the validity of self-report data.

What Is IER?

IER, "a response set in which the respondent answers a survey measure with low or little motivation to comply with survey instructions, correctly interpret item content, and provide accurate responses" (p. 100, Huang et al., 2012), can manifest itself in different ways. In some cases, participants may engage in IER by responding randomly to a series of questionnaire items. A given participant, for example, may choose "strongly agree" for the item "I am satisfied with my job" and carelessly choose "disagree" for the nearly identical item "I am happy with my job." IER may also result in a more systematic response pattern. A participant displaying this form of IER, for instance, may choose the "slightly agree" option for 30 consecutive items.

The effects of IER on research findings are potentially very serious. IER—particularly when it is manifested as random responding—would likely lower the reliability of psychological measures (Huang et al., 2012; Meade & Craig, 2012). Imagine, for instance, a research participant who randomly responds to a series of 20 self-report Conscientiousness items. The inclusion of that participant's data would likely lower the sample's reliability estimate for the Conscientiousness scale. Perhaps even more alarming, the presence of IER can in some instances inflate the relationships between conceptually distinct constructs (Huang, Bowling, & Liu, 2013) and thus increase the probability of a Type-I error. In other instances it can attenuate the relationships between conceptually related constructs (Liu, Huang, Bowling, & Bragg, 2013) and result in greater probability of a Type-II error. Translating the research findings into an applied example, the presence of IER may lead to an adoption of an invalid selection test (Type-I error) or a rejection of a valid selection test (Type-II error).

Critics may counter that IER is too rare to pose a serious threat to the validity of research data, but this position is not supported by recent research findings, which suggest that approximately 10% to 12% of research participants display evidence of IER (Meade & Craig, 2012). Empirical tests confirm that IER generally occurs at a rate sufficient to negatively impact the validity of self-report measures (Huang et al., 2013; Liu et al., 2013). Given its prevalence and its potential effects, it is not surprising that researchers have developed several strategies for detecting IER.

Strategies for Detecting IER

Below we discuss five strategies for detecting IER cases for potential removal from further analyses.

Infrequency approach. In the infrequency approach, participants are asked to answer self-report items that include a response option that can be safely assumed as the correct response. For example, one can assume that "no" is the accurate response to the question "I eat cement occasionally" (Huang et al., 2013). The presence of IER is inferred when participants provide responses that deviate from the assumed correct response.

Repeated-item approach. In the repeated-item approach, participants are asked to respond to the same survey item multiple times. Participants, for example, could be asked to respond to the item "I am satisfied with my organization" near the beginning of the questionnaire and then again later in the questionnaire. IER is assumed to be present when a given participant provides contradictory responses to an item that appears multiple times.

Inconsistency approach. The inconsistency approach uses correlations or similarity scores to examine within-person relationships between items that are highly related among participants in general. The item "I am satisfied with my supervisor," for example, should be positively related to the item "I am happy with my supervisor," and both should be negatively related to the item "I am dissatisfied with my supervisor." Within-person relationships that deviate from the above pattern would indicate IER.

Response pattern approach. The response pattern approach focuses on the detection of suspicious response patterns across a series of items. A participant may engage in IER, for instance, by selecting "neither agree nor disagree" as his or her response to 50 consecutive items. Another participant may respond in a regular pattern, such as a participant who alternates between providing "strongly disagree" and "strongly agree" responses. It is unlikely that a careful survey respondent would display such response patterns.

Response time approach. In the response time approach, IER is assumed to have occurred when a given participant completes a questionnaire unusually quickly relative to other participants. For example, it is likely that a particular participant who completed a questionnaire in 5 minutes has displayed IER if the average participant requires 30 minutes to complete the same questionnaire. The use of the response time approach is facilitated by electronic questionnaires, which typically allow researchers to record when a participant has begun and completed the questionnaire.

To What Extent Do I-O Researchers Recognize IER as a Threat to Validity?

We suspect that I-O researchers generally have limited knowledge of IER and as a result they typically eschew the use of methods designed to detect and minimize the occurrence IER. First, unlike other potential threats to validity (e.g., social desirability, trait negative affectivity), IER is seldom discussed as a potential methodological problem in I-O graduate training and in commonly used textbooks.[1] Although research has been conducted to examine other sources of measurement error, such as respondent fatigue, we argue that IER may pose a broader scope of problems beyond fatigue. Specifically, fatigue occurs because participants are *unable* to engage in careful responding, whereas IER may occur when participants can respond carefully but choose not to. In addition, fatigue-related issues tend to be more relevant in longer surveys where respondents may engage in IER-like behaviors toward the middle or end of the survey (Baer, Ballenger, Berry, & Wetter, 1997; Berry et al., 1991). IER, on the other hand, can stem from other factors such as respondents' lack of interest in the survey, limited contact between the researcher and the participants, and environmental distractions (Meade & Craig, 2012). Under such circumstances, IER may be present throughout a survey and should be identified accordingly. Furthermore, the practice of screening for IER is rarely reported in journal articles, with limited methodological studies devoted to the detection of IER.

It is thus important to document I-O researchers' perceptions and practices concerning IER. In this study we surveyed SIOP members to examine: (a) the extent to which IER is perceived as a significant problem, (b) the extent to which researcher detect IER with various strategies, and (c) the extent to which researchers believe they have found evidence of IER in their own data.

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[1] Indeed, a cursory examination of six measurement and testing textbooks showed that only one (Furr & Bacharach, 2013, *Psychometrics: An Introduction*) directly mentions careless responding briefly as a source of response bias.

Method

Participants

An invitation email was sent to 2,360 professional SIOP members using e-mail addresses obtained via the SIOP Community Directory. Members interested in participating were directed to an online questionnaire. The sample consisted of 254 SIOP members (39% women, mean age = 43 years). Respondents self-identified as scientists (37%), practitioners (23%), or both scientists and practitioners (40%). Approximately 67% of participants held academic positions.

Measures

We designed a short survey to investigate SIOP members' beliefs about IER and their use of methods designed to detect IER. To minimize survey length, each study variable was assessed with a single-item measure.

IER-specific practices. We used four items to examine common practices related to IER. Specifically, we measured respondents' perceived impact of IER (*perceived impact*), effort in dealing with IER (*effort*), and the perceived frequency of IER in surveys (*perceived frequency*; see Table 1). Responses were made on a five-point Likert scale (1 = *not at all*; 5 = *almost all the time/extremely*). A fourth item, *detection approaches*, assesses the extent to which respondents utilize the following approaches: (a) infrequency approach, (b) repeated-item approach, (c) inconsistency approach, (d) response pattern approach, and (e) response time approach. To assist participants in answering the *detection approaches* item, we provided them with descriptions of each approach (see Table 2).

General survey practices. We used four items to assess respondents' general survey practices, including data collection method, typical amount of data collected, types of samples used, and types of student samples used (see Table 1). Specifically, for *data collection method*, we asked respondents to indicate the percentage of times they utilize (a) online surveys, (b) paper-and-pencil surveys, (c) surveys in lab setting, and (d) experiments. For *typical amount of data collection*, we asked respondents to estimate the sample size of the datasets they survey in a year. *Types of sample* assessed the percentage of times respondents' studies involve (a) student sample, (b) organizational sample, and (c) online paid participant sample (e.g., Mechanical Turk). For the *types of student sample*, respondents indicated if the research involves mostly undergraduate students, graduate students, or both.

Table 1
Items on IER and Survey Practices

Practices	Item
Perceived impact	To what extend do you think insufficient effort responding impacts your survey findings?
Effect	How often do you make an effort to deal with insufficient effort responding?
Perceived frequency	How often do you find IER in your surveys?
Detection approaches	What are the techniques that you use for screening and dealing with insufficient effort responding?
Data collection method	How often do you use each of the following data collection methods?
Typical amount of data collection	What is the typical amount of data collection you do in a calendar year?
Types of sample	What type of sample does your research usually involve?
Types of student sample	If your research involve a student sample, which of the following types are most representative?

Demographic information. We asked participants to report their age, gender, and professional role (i.e., scientist, practitioner, or scientist/practitioner).

Results

What Are SIOP Members' General Perceptions of IER?

On average, respondents reported moderate levels of perceived impact of IER, $M = 2.62$ ($SD = .81$), effort in dealing with IER, $M = 3.13$ ($SD = 1.34$), and perceived frequency of IER in survey studies, $M = 2.60$ ($SD = 1.19$), with a plurality of respondents answering "A little" for perceived impact and effort (52% and 33%, respectively) and "Sometimes" for perceived frequency (43%; See Figure 1 through 3)

Table 2

Description of the Detection Approaches

Detection approach	Description
Infrequency approach	Uses items on which all or virtually all honest and attentive participants should provide the same response (e.g., "I was born on February 31st").
Repeated-item approach	Asks participants to respond to a particular item multiple times within the survey.
Inconsistency approach	Examines within-person correlation or similarity in responses to items that are highly correlated.
Response pattern approach	Examine if a participant provides a suspicious pattern of responses (e.g., a long string of the same response options).
Response time approach	Screen for overly fast survey completion times.

Overall, there was a significant difference among the detection approaches respondents adopted, $F (5, 1509) = 28.37$, $p < .01$. Post hoc analyses revealed that response pattern approach ($M = 41.41\%$) was the most commonly used technique, followed by response time approach ($M = 21.49\%$), inconsistency approach ($M = 16.16\%$), infrequency approach ($M = 15.25\%$), and repeated-item approach ($M = 14.81\%$). No significant differences were detected among the frequency of use of these latter four techniques. In addition to the aforementioned approaches, respondents identified additional techniques to screen and deal with IER, such as screening out respondents with excessive missing values, using instructional manipulation checks, checking for univariate/multivariate outliers, and using open-ended questions. Several respondents also indicated methods to motivate survey respondents, such as "direct plea for engaged participation," offering feedback to respondents on their survey results, and training and better communication.

We also examined intercorrelations among IER-specific beliefs and practices. Results revealed that perceived impact was significantly associated with both effort, $r = .21$, $p < .01$, and perceived frequency, $r = .38$, $p < .01$. That is, SIOP members are more likely to exert effort to deal with IER when they also believe that the perceived impact of IER is high. As expected, effort was also positively correlated with perceived frequency, $r = .47$, $p < .01$, indicating that IER is more frequently found among those who make an effort to look for it. In addition, higher levels of perceived frequency were associated with higher frequencies in utilizing infrequency approach, response pattern approach, and response time approach, indicating that the use of these specific approaches may lead to identifying more IER compared to the other approaches (see Table 3).

Effects of Sample Types

On average, organizational samples (58%) are most frequently used in research among members of SIOP, followed by student samples (27%), and online paid samples (8%). Interestingly, sample types were shown to be related to IER beliefs and practices (see Table 3). In particular, the more frequent use of organizational samples was negatively associated with perceived impact, $r = -.21$, $p < .01$, effort, $r = -.22$. $p < .01$, and perceived frequency, $r = -.28$, $p < .01$, whereas the frequent use of paid online samples positively correlated with perceived impact, $r = .14$, $p < .05$, effort, $r = .31$, $p < .01$, and perceived frequency, $r = .33$, $p < .01$. In addition, the use of student samples was positively related with perceived frequency, $r = .18$, $p < .01$. In sum, these findings suggests that researchers may be least skeptical of data quality when organizational samples rather than paid online or student samples are used.

Effects of Data Collection Methods

Descriptive statistics revealed that online surveys (66%) were the most popular method for data collection, followed by paper- and-pencil surveys (18%), while the other methods were utilized less than 7% of the time. We used correlations to examine whether data collection methods were associated with IER beliefs and practices. In general, SIOP members' methods of data collection were not associated with their IER perceptions and practices (rs ranged from -.11 to .15).

Differences Across Professional Roles

ANOVA revealed a significant overall difference in effort, $F (2, 247) = 4.56$, $p < .05$, depending upon one's professional role. Post hoc analyses indicated that both scientists ($d = .48$, $p < .05$) and scientist –practitioners ($d = .43$, $p < .05$) reported higher effort than did practitioners. In addition, perceived frequency differed across roles, $F (2, 222) = 5.74$, $p < .01$, such that scientists ($d = .62$, $p < .01$) as well as scientist –practitioners ($d = .48$, $p < .05$) reported higher perceived fre-
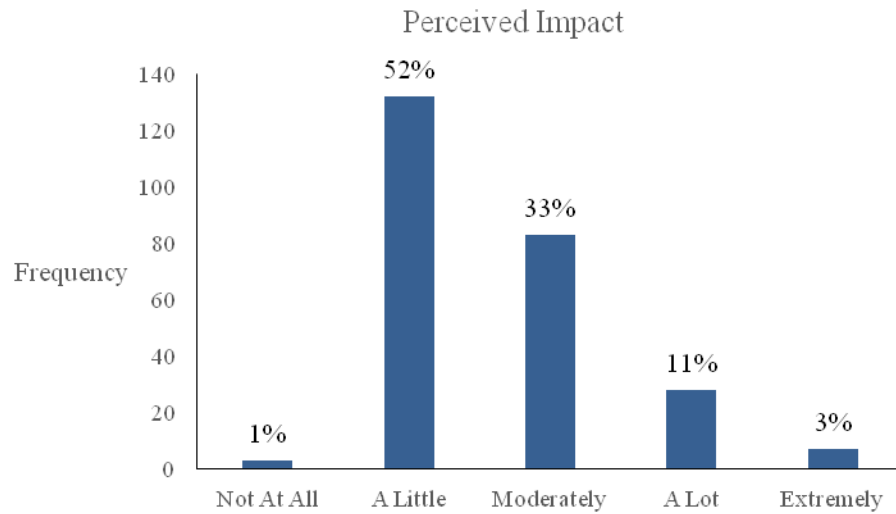
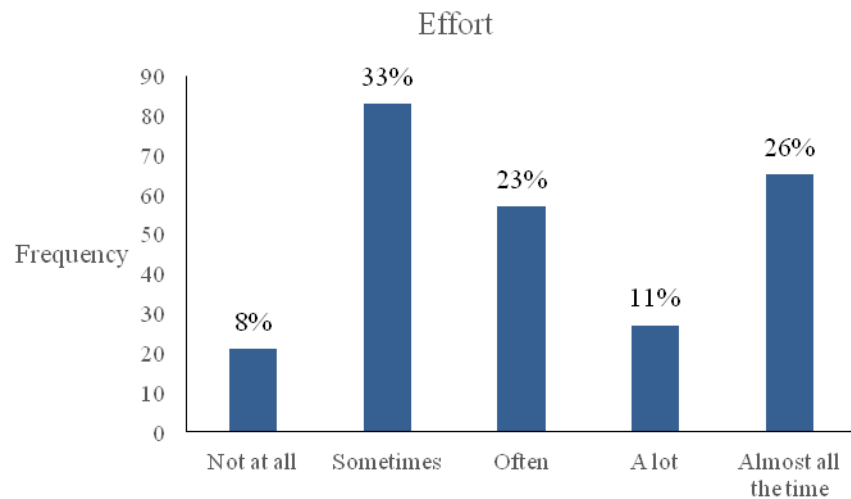*Figure 1:* **Distribution of Responses on Perceived Impact**

Figure 2: **Distribution of Responses on Effort**

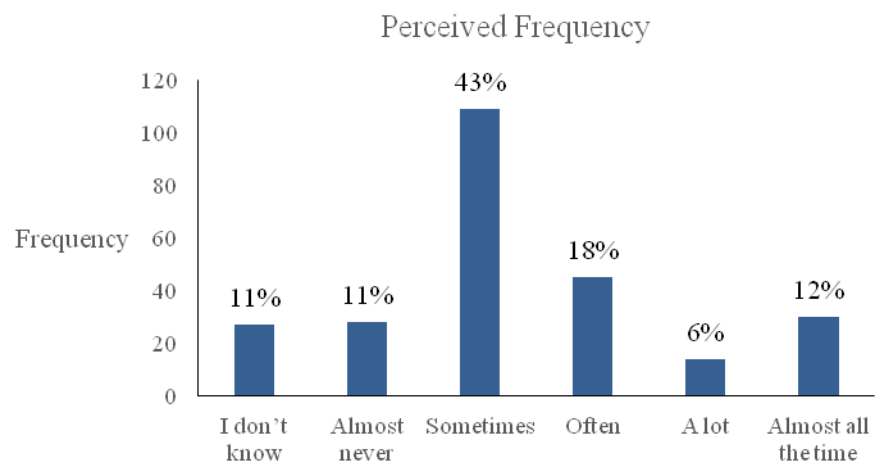*Figure 3:* **Distribution of Responses on Perceived Frequency**

Table 3

Descriptive Statistics and Correlations for IER Practice

	1	2	3	4	5	6	7	8	9	10	11
1. Perceived impact											
2. Effort	0.21										
3. Perceived frequency	0.38	0.47									
4. Infrequency	0.12	0.31	0.29								
5. Repeated-item	0.10	0.04	-0.12	0.22							
6. Inconsistency	0.11	0.27	0.12	0.23	0.15						
7. Response pattern	0.06	0.43	0.25	0.20	-0.03	0.22					
8. Response time	0.15	0.33	0.34	0.13	0.06	0.14	0.39				
9. Student samples	0.12	0.07	0.18	0.18	0.11	-0.02	0.13	0.15			
10. Organizational samples	-0.21	-0.22	-0.28	-0.20	-0.03	-0.09	-0.18	-0.25	-0.70		
11. Online paid samples	0.14	0.31	0.33	0.23	-0.11	0.12	0.16	0.29	0.02	-0.41	
M	2.62	3.13	2.60	15.25	14.81	16.16	41.41	21.49	26.56	57.74	8.35
SD	0.81	1.34	1.19	31.12	28.47	29.91	40.00	33.75	32.40	39.51	18.59

Note . N = 253, except for correlations involving perceived frequency, where N = 226, as "I don't know, because I don't look for IER" was coded as missing. When $|r| > .13$, $p < .05$; when $|r| > .17$, $p < .01$; when $|r| ? .22$, $p < .001$.

quency than did practitioners. No significant difference, however, was found between scientists and scientists–practitioners in either effort or perceived frequency. Perceived impact also did not differ significantly across roles.

Given the negative association between the use of organizational samples and effort, we suspected that the difference in effort across roles could be attributed to their primary sample types. Thus, we conducted ANCOVA controlling for organizational samples. Results showed that when controlling for the amount of organizational samples used, the significant effects of role on effort disappeared, $F(2, 245) = 1.30$, *ns*. In other words, the discrepancies in effort across roles were likely driven by the amount of organizational samples they use. Therefore, practitioners may not be making as much effort in dealing with IER because they mostly use organizational samples and perceive such data source as more valid than other sources (i.e., student samples and online paid samples).

Discussion

Despite growing evidence that IER is a prevalent problem and that it has unwanted effects on scale validity (Huang et al., 2013; Liu et al., 2013), SIOP members generally appear to consider it a minor or moderate issue and hence often do little to circumvent its effects. The current findings might in fact underestimate the extent to which SIOP members have overlooked the problem of IER, given that SIOP members who perceive IER as a threat may be more likely to have responded to our questionnaire. Although the positive associations among perceived impact, effort, and perceived frequency appear self-evident, it raises a serious issue: If researchers/practitioners turn a blind eye to IER, they are far less likely to identify IER in their survey results, thus creating a vicious circle that perpetuates inaction on IER. This phenomenon echoes Kepes and McDaniel's (in press) criticism on a lack of a methods-related belief system that concerns the procedures of measurement, data collection, and analysis (see LeBel & Peters, 2011) such that the ignorance toward IER may pose yet another threat to the robustness of results in I-O research. We believe this finding is disconcerting and hope to call for a better understanding of IER building upon this article as well as recent empirical findings (e.g., Huang et al., 2012; Meade & Craig, 2012) and to educate researchers and practitioners about the undesirable effects of IER.

Interestingly, we found that IER was perceived to be a lesser threat among those who use organizational samples as opposed to paid online samples (e.g., Mechanical Turk) or student samples, which in turn lead to less effort in dealing with IER among nonacademic SIOP member than among academic members. These findings are consistent with the tacit assumption that IER is most prevalent within student samples and paid online samples and within datasets gathered using electronic questionnaires. On the other hand, organizational samples may be perceived as more motivated to pay attention in survey studies due to researchers' active involvement in data collection or due to their perceptions of the research as being more closely related to their own interests. Despite what participants in the current study assume; however, we note evidence that IER is a potential threat in applied organizational research (e.g., Calsyn & Winter, 1999; Green & Stutzman, 1986; Hough, Eaton, Dunnette, Kamp, & McCloy, 1990). In an organizational setting, employees may be too busy or too distracted with work activities to give sufficient effort in survey responding. Without assessing IER, practitioners will have no

knowledge of the extent to which IER may have been present in the samples and thus no control of IER's detrimental effect in the development and validation of a scale, the assessment of a training program, or the interpretation of an organizational survey. Furthermore, the impact of IER has on organizational data may depend on the purpose of the survey, such that IER may become more problematic in situations where employees are less motivated (e.g., filling out a survey for training development) versus situations where the incentives are relatively high (e.g., selection). As a result, future research may further examine the quality of data collected from organizational samples and explore techniques that enable survey researchers to better detect and deal with IER across different settings. Although participants in organizational surveys may largely avoid engaging in IER—particularly when the survey addresses personally relevant content—some organizational practices (such as the "oversurveying" of an organization's workforce) may in fact encourage IER.

Call for Commentary

1. Do you think IER is an important issue to data quality? Why or why not?
2. What are the strategies that you use to screen for IER?
3. What is the biggest obstacle(s) that keeps you from looking for or examining IER?
4. Under what conditions do you think IER is most likely to occur?
5. Do you think some survey participants are predisposed to habitually engage in IER?
6. What influence do you think IER may have on your study results?
7. Do you think there has been sufficient coverage of the issue of IER in our graduate training?

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The 2011 SIOP Graduate Program Benchmarking Survey
Part 4: Internships

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Welcome to the fourth installment of the report on the 2011 SIOP Graduate Program Survey. In this issue, we offer norms on assorted features of I-O program internships. As an applied discipline, I-O psychology is clearly invested in the scientist–practitioner model, and many I-O psychology programs, accordingly, see fieldwork experience as an important part of graduate training (Aamodt, 2013). Programs vary considerably, however, in the importance placed on internships, the nature of such experiences, their management, and associated requirements. Based on a survey conducted in 2003, Munson, Phillips, Clark, and Mueller-Hanson (2004) offer detailed descriptions of internships from the organization's perspective (e.g., intern recruitment and selection, duties, supervision, feedback), and Mueller-Hanson and Phillips (2005) provide a follow-up on internships for undergraduate and high school students. Results reported here offer a complementary snapshot of internships from the perspective of I-O graduate programs, in terms of both mainstream practice and variability across programs.

As in previous articles in this series, we sought not only general benchmarks but also comparisons between master's and doctoral degree programs crossed with psychology versus business/management departments. Insufficient data are available for business/management programs on most of the internship variables, precluding norms (minimum N = 3) and comparisons involving those programs. As in the earlier articles, (a) programs outside the U.S. are excluded due to questionable representativeness; (b) online-only programs are excluded from the subgroup comparisons; (c) means, standard deviations, medians, and skewness, min, and max values are reported for continuous variables, whereas frequencies and percentages are offered for nominal variables; and (d) norms are provided separately for three "top-10" lists identified by Gibby, Reeve, Grauer, Mohr, and Zickar (2002; most productive doctoral programs), and by Kraiger and Abalos (2004; top master's and doctoral programs, separately, based on student ratings). Owing to the low Ns for business/management programs, ANOVAs and multiway frequency analyses are replaced in most cases by independent sample t-tests and chi-squares, comparing degree types within psychology departments. We begin with basic internship features; then consider policies and procedures, intern performance, internship site locations, distinctive internship qualities of the three top-10 lists; and conclude with exploratory derivation of internship procedural dimensions and linkages with key applicant variables.

Basic Internship Features

Table 1 summarizes for the total available sample, as well as by degree and department type, whether internships are available, whether they are required, and at what point in the student's program of study they tend to be engaged. Internships are available in 80% of all (U.S.) programs, significantly more so in psychology departments compared to business/management departments (91% vs. 19%; X^2 = 45.8, p < .001). Internships are especially uncommon in business/management doctoral programs (0 of 11 responding programs). Given the noted applied focus of I-O psychology, it may be somewhat surprising that internships are required in only 46% of (U.S.) programs. This rate drops to 38%, based on the 119 programs responding to the availability item (i.e., programs in which internships are not available obviously do not require them). The requirement rate is significantly higher for master's versus doctoral programs within psychology departments (58% and 33%, respectively), reflecting a more applied focus at the master's level. We did not ask programs what types of applied experiences are available to students in lieu of internships (e.g., consulting-type projects undertaken in a practicum class). This would be a reasonable pursuit for future study.

Regarding when internships are undertaken, the norm for master's students is at the end of the first year and into the second, whereas, for doctoral students, it is in or beyond the third year. This difference is to be expected, given the respective graduation timelines (typically, 2 vs. 5 years); but it suggests doctoral students may be better

Table 1

Main Internship Features: Nominal Variables

| | All Programs[a] | | | | Psychology | | | | | | | Business/Management | | | | | |
| | | | | | Masters[b] | | | Doctoral[b] | | | | Masters[b] | | | Doctoral[b] | | |
Item/variable	N	Freq	%	sig.[c]	N	Freq	%	N	Freq	%	sig.[d]	N	Freq	%	N	Freq	%
Internship available	119	95	79.8	--	53	51	96.2	39	33	84.6		5	3	60.0	11	0	.0
Internship required	97	45	46.4	--	51	30	58.8	33	11	33.3	*	4	1	25.0	0	–	–
Year of study internship generally completed																	
First	85	3	3.5		45	3	6.7	30	0	.0		2	–	–	0	–	–
End of first	85	36	42.4		45	30	66.7	30	3	10.0	**	2	–	–	0	–	–
Second	85	36	42.4		45	28	62.2	30	5	16.7	**	2	–	–	0	–	–
End of second	85	22	25.9	*	45	6	13.3	30	11	36.7	*	2	–	–	0	–	–
Third or beyond	85	32	37.6		45	5	11.1	30	25	83.3	**	2	–	–	0	–	–

[a]Excluding non-US.

[b]Excluding non-US and on-line only.

[c]Chi square significance test comparing frequencies of programs in which internships are required versus optional; *p < .05, **p < .01, two-tailed.

[d]Chi square significance test comparing Masters and Doctoral program frequencies within psychology departments; *p < .05, **p < .01, two-tailed.

prepared for more advanced internships, as more coursework is likely to have been completed prior to internship. For both degree types, internships within the first year of study are rare (7% of psychology master's programs and 0% of psychology doctoral programs), suggesting that most programs seek to ensure their students have relevant expertise before starting their internships. We did not ask for details here, but obvious aims include protection of students from failure and protection of the program's reputation as an intern source. Interestingly, programs requiring internships are more than twice as likely as programs where internships are optional to have students undertake internships at the end of the second year (37% vs. 16%, respectively).[1] This suggests that programs requiring internships may tend to seek stronger assurances that students are adequately prepared for fieldwork.

Norms for continuous variables describing basic internship features for all available (US) programs combined are presented in Table 2. The mean of 9.4 internship placements per year amounts to 764 in the 81 responding programs collectively. Given the 59.8% survey response rate (see the initial October, 2012 article) and assuming unbiased representation with respect to internship placements, the total number of I-O interns placed each year is estimated to be around 1,278. This offers a useful benchmark for tracking trends in I-O internship placements over time. Not surprisingly, number of internships per year correlates positively with number of yearly graduates (r = .30, p < .01, one-tailed), both variables reflecting program size. Contrary to what might be expected, however, internships per year are not significantly more numerous in programs requiring internships than where they are optional (means = 10.7 vs. 8.2; p = .06, one-tailed). This suggests that students seek internships regardless of whether or not their programs require them, perhaps due to expected competitive value of fieldwork when job hunting.

Considerably fewer programs reported min and max working hours per internship (around 50% and 25%, respectively), suggesting that upper and lower limits are not often specified in hourly terms. Results show notable variability across programs in total working hours for both the min and max values. Two programs reported < 50 hours as a minimum for an entire internship, whereas six reported 600 or more. At the other pole, five programs reported maximum values of 150 hours or less, whereas three reported at least 1,000 hours. Such variability is mirrored in the overall length of internships. Around 11%, on average, last 8 weeks or less; 28% are completed over an entire semester, and around 20% are completed in each of the 9- to 15-week, 9-month, and 1-year intervals. Regarding the overall time commitment for I-O internships, there is no single, well-defined norm.[2]

Respondents were asked to rate the difficulty of arranging internships, using a 1 to 5 scale (see table note). The mean of 2.7 falls just on the "easy" side of the midpoint; 8% of responding programs rated difficulty at 4 or higher, and 34% rated it at 2 or lower. Around 62% of the effort taken to secure internships was attributed to students (versus faculty), on average, although there is considerable variability across programs. Not surprisingly, the most common time of year for internships is summer (mean = 39%), followed by fall (mean = 30%). The low value for winter (mean = 9.5%) may reflect the winter term being recognized in relatively few programs.

[1] In psychology master's programs, the comparison is 22% vs. 0% (p < .05, two-tailed), and, in psychology doctoral programs, it is 54.5% vs. 26% (p > .05).
[2] Combining categories, 48% of internships, on average, last between 9 weeks and 1 full semester.

Table 2

Main Internship Features: Continuous Variables

Item/variable	N	Mean	SD	Skew		Median	Min	Max
Average number of total placements per year	81	9.43	7.17	2.84	**	9.0	1	50
Range of required working hours								
Min	39	278.59	207.81	2.05	**	225.0	40	1,100
Max	20	472.50	322.67	.94		425.0	100	1,200
Percentage of internships of given duration								
< 5 weeks	81	4.38	17.54	4.83	**	.0	0	100
6 to 8 weeks	81	6.79	17.42	3.04	**	.0	0	80
9 to 15 weeks	81	20.19	33.22	1.49	**	.0	0	100
1 semester	81	28.02	35.27	1.05	**	10.0	0	100
2 semester or 3 quarters	81	19.81	30.95	1.64	**	.0	0	100
Full year	81	20.80	33.24	1.42	**	.0	0	100
Difficulty of arranging internships[a]	91	2.68	.74	-.23		3.0	1	5
Relative effort spent arranging internshps (%)								
Students (vs. faculty)	87	61.67	28.61	-.61	*	65.0	0	100
Percentage of internships per time of year								
Fall	76	29.83	26.03	1.43	**	25.0	0	100
Winter	76	9.54	12.17	.75	**	.0	0	40
Spring	76	21.47	19.67	1.84	**	25.0	0	100
Summer	76	39.16	28.52	.59	*	25.0	0	100
Range of pay ($/hr.)								
Minimum	54	9.96	7.55	.01		12.0	0	30
Maximum	54	28.85	16.81	1.86	**	25.0	0	100
Average	58	18.29	9.07	.20		20.0	0	45

Excluding non-US. *$p < .05$, **$p < .01$, two-tailed

[a]1 = Very easy, 2 = Somewhat easy, 3 = Some easy, some difficult, 4 = Somewhat difficult, 5 = Very difficult

We asked respondents to indicate minimum, maximum, and approximate mean pay for interns in terms of dollars per hour. About a third of programs completing this section of the survey skipped over these values. The reason for this is unclear. One possibility is lack of certainty on intern pay; another is concern over the loss of confidentiality regarding pay as a potentially competitive metric. Taking observed data at face value, the average low-end of the pay scale (around $10/hr) is above the 2011 US minimum wage ($7.25/hr.), the average high end is around four times minimum wage ($29/hr), and the average midpoint is around $18/hr. Values vary substantially around those means. Notably, three programs reported $0/hr at the high end, indicating all internships in those programs are unpaid. At the other extreme, some programs report $30/hr as the lowest rate, and $100/hr as the highest. Many factors are likely in play here, including local cost of living, wage norms, and supply/demand involving internship opportunities and the availability of qualified interns.

Breakouts by degree type on the basic continuous variables (within psychology departments) are reported in Table 3. Few variables yield significant differences. A pair of differences is evident on internship durations: the man for one-semester-long placements is about double for master's students compared to doctoral students (35.4% vs. 16.4%), and this pattern reverses for full-year-long placements (14.5% vs. 32.4%). Internship pay is also significantly different at the low end (mean = $8.10/hr. vs. $13.65 for master's and doctoral, respectively) and at the midpoint (mean = $16.97/hr. vs. $21.59/hr.). Interestingly, mean hourly wages at the upper end are similar ($29.93 vs. $28.53). This could reflect a ceiling effect on intern pay, whereby host organizations pay only up to a certain amount

Table 3

Main Internship Features: Continuous Variables in Master's and Doctoral Programs in Psychology Departments

Item/Variable	Masters Programs							Doctoral Programs							sig.[b]
	N	Mean	SD	Skew	Median	Min	Max	N	Mean	SD	Skew	Median	Min	Max	
Average number of total placements per year	44	10.11	5.51	1.60 **	10.0	2	30	29	8.34	9.36	3.38 **	6.0	1	50	
Range of required working hours															
Min	27	250.74	152.08	1.30 **	200.0	40	600	9	405.56	318.95	1.41 *	300.0	120	1100	#
Max	13	401.54	253.87	.98	400.0	100	1000	5	726.00	422.35	-.25	600.0	150	1200	#
Percentage of internships of given duration															
< 5 weeks	42	4.76	18.61	4.52 **	.0	0	100	29	4.66	18.90	4.94 **	.0	0	100	
6 to 8 weeks	42	8.21	17.59	2.64 **	.0	0	80	29	6.03	19.38	3.43 **	.0	0	75	
9 to 15 weeks	42	21.55	33.79	1.42 **	.0	0	100	29	12.24	24.99	2.07 **	.0	0	90	
1 semester	42	35.36	38.99	.61	17.5	0	100	29	16.38	23.94	2.16 **	10.0	0	100	*
2 semester or 3 quarters	42	15.60	28.05	2.14 **	.0	0	100	29	28.28	34.78	1.18 **	15.0	0	100	
Full year	42	14.52	27.63	2.04 **	.0	0	90	29	32.41	39.45	.80	10.0	0	100	*
Difficulty of arranging internships[a]	48	2.77	.72	.02	3.0	1	5	33	2.61	.70	-.40	3.0	1	4	
Relative effort spent arranging internships (%)															
Students (vs. faculty)	46	58.70	26.88	-.60	60.0	0	100	31	66.94	28.68	-.76	80.0	10	100	
Percentage of internships per time of year															
Fall	43	29.05	26.43	1.47 **	25.0	0	100	24	31.67	27.69	1.68 **	25.0	0	100	
Winter	43	7.44	10.71	.92 *	.0	0	25	24	11.46	11.84	.18	7.5	0	25	
Spring	43	21.02	14.51	.05	25.0	0	50	24	17.50	16.49	1.67 **	20.0	0	75	
Summer	43	42.49	30.67	.47	34.0	0	100	24	39.38	24.46	.55	25.0	0	90	
Range of pay ($/hr.)															
Minimum	29	8.10	7.14	.09	10.0	0	20	17	13.65	5.77	-1.60 **	15.0	0	20	*
Maximum	29	29.93	18.81	2.10 **	25.0	0	100	17	28.53	6.79	1.96 **	30.0	20	50	
Average	33	16.97	9.02	.28	18.0	0	45	17	21.59	4.53	1.62 **	20.0	15	35	*

Excluding non-US and on-line only. *p < .05, **p < .01, two-tailed

[a]1 = Very easy, 2 = Somewhat easy, 3 = Some easy, some difficult, 4 = Somewhat difficult, 5 = Very difficult

[b]Comparing Masters and Doctoral program means within psychology departments using the t-test #p < .10, *p < .05, ** p < .01, two-tailed.

regardless of intern degree level. In addition, higher variability in pay at the master's level may reflect correspondingly greater variability in master's-level intern work demands. Notably, 19% of master's programs reported $0 at the low end, compared to just 5% of doctoral programs.

Internship Policies and Procedures

Table 4 presents norms for all available programs and separately for psychology master's and doctoral programs on various logistical aspects of internship management. For the total sample, we compared programs in which internships are required versus optional, under the general expectation that policies would be more formalized in the former. Students in most programs are informed of internship opportunities as they come up; rarely are they expected to find internships entirely on their own. Also fairly rare is reliance on intern request forms (11.5%) and/or internship applications (12.6%). Students compete for top internships in about half of participating programs. An obvious factor affecting this rate would be the availability of especially desirable internships. Follow-up analysis shows in addition that student competition is more likely where internships must be preapproved by the program (56% vs. 31%; p < .05, one-tailed). How involved such programs are in adjudicating the competition is unclear. The large majority of programs vet internships prior to students taking them on (81.5%), seeking in particular to ensure they entail I-O and/or HR content (83%). About half the responding programs (54%) require onsite supervisors to have relevant expertise. Interestingly, vetting is more prevalent in master's (91%) versus doctoral programs (65%), and a similar difference is evident with respect to requiring onsite supervisor expertise: 71% versus 40% for the two degree levels, respectively. Partially offsetting this latter difference, doctoral programs are more likely to require that onsite supervisors hold a relevant doctorate (37% vs. 11%). It may be that concerns over student readiness are alleviated at the doctoral level by longer preparatory intervals (see Table 1), and concerns over content may be alleviated to some extent by more prevalent requirements that onsite supervisors hold an advanced degree.

Table 4

Internship Policies and Procedures

| Item/variable | All programs[a] | | | | Psychology | | | | | | |
| | N | Freq | % | sig.[c] | Masters[b] | | | Doctoral[b] | | | |
					N	Freq	%	N	Freq	%	sig.[d]
How are internships arranged?											
Students informed as opportunities come up	87	81	93.1		45	40	88.9	32	31	96.9	
Available opportunites are catalogued	87	21	24.1	*	45	13	28.9	32	5	15.6	
Internship sites on-going from year-to-year	87	46	52.9	*	45	24	53.3	32	18	56.3	
Internship duties set out in letter of agreement/contract	87	35	40.2		45	21	46.7	32	10	31.3	
Students complete internship application	87	11	12.6		45	7	15.6	32	2	6.3	
Prospective sites complete intern request form	87	10	11.5	*	45	4	8.9	32	3	9.4	
Students compete for top sites	87	43	49.4		45	26	57.8	32	15	46.9	
Students matched to sites based on needs/skills	87	30	34.5	*	45	18	40.0	32	9	28.1	
Credentials required of on-site supervisor											
None	86	32	37.2		45	12	26.7	30	11	36.7	
Demonstrated expertise in HR/IO	86	46	53.5		45	32	71.1	30	12	40.0	**
Masters degree in management/IO	86	15	17.4		45	8	17.8	30	7	23.3	
Doctoral degree in management/IO	86	17	19.8		45	5	11.1	30	11	36.7	**
Restrictions imposed in undertaking internships											
Must be pre-approved by faculty/program director	81	66	81.5		46	42	91.3	26	17	65.4	**
Must entail primarily IO or HR activites	81	67	82.7		46	42	91.3	26	20	76.9	
Preliminary coursework required	81	50	61.7	**	43	30	69.8	26	14	53.8	
Project data must be made available for research	81	0	.0		46	0	.0	26	0	.0	
Formal contract signed by all parties	81	24	29.6		46	14	30.4	26	7	26.9	
Stability in arranging internships over the last 5 years											
Used to be easier, now more difficult	88	15	17.0		46	8	17.4	32	5	15.6	
Used to be more difficult, now easier	88	12	13.6		46	7	15.2	32	3	9.4	
No change	88	28	31.8		46	10	21.7	32	14	43.8	*
Somewhat unpredictable from year-to-year	88	33	37.5		46	21	45.7	32	10	31.3	
Highly unpredictable from year-to-year	88	0	.0		46	0	.0	32	0	.0	

[a]Excluding non-US.

[b]Excluding non-US and on-line only.

[c]Chi square significance test comparing frequencies of programs in which internships are required versus optional; *$p < .05$, **$p < .01$, one-tailed.

[d]Chi square significance test comparing Masters and Doctoral program frequencies within psychology departments; *$p < .05$, ** $p < .01$, two-tailed.

N responding for business/management Masters and Doctoral programs = 2 and 0, respectively, precluding normative interpretations

No program requires host organizations to make research data available (although some organizations do allow this; Munson et al., 2004). Formal internship contracts signed by both parties are required in around 30% of programs. Contract details (e.g., regarding liability) are worthy targets of further inquiry.

Also reported in Table 4, as an extension of results in Table 3 regarding the difficulty of arranging internships, is a frequency breakout on stability of internship arrangement over time. Results are largely equivocal, with roughly a third of participating programs indicating no change in difficulty, a third reporting either increasing (17%) or decreasing (14%) difficulty, and a third reporting some unpredictability. No program reported high unpredictability from year

to year in securing internships. For no obvious reason, high stability (i.e., no change) is twice as common in doctoral as in master's programs (44% vs. 22%, respectively). The possibility that doctoral-level internships may be more institutionalized at host organizations is countered by the lack of difference between degree levels on whether internships are ongoing from year to year (53% vs. 56%). These results, however, do not speak to the proportion of internships that are secured within programs; it may be that, where programs enjoy secured internships, such internships are more common at the doctoral level. Also factoring in may be the lower number of doctoral-level internships needed per program (see Table 3): Stability is more likely with fewer placements.

Intern Performance

Norms for intern performance evaluations are offered in Table 5. Formal evaluations are undertaken at 63% of responding programs offering internships, and the rate is higher where internships are required (82%) versus optional (46%). APA requires intern evaluation and feedback for accreditation of clinical psychology programs (APA, 2009; see p. 13). How the rate for I-O programs compares to that in other disciplines (e.g., engineering) is anyone's guess; the proportion might be expected to be higher in I-O, given the relevance of performance appraisal to the I-O bailiwick.

Table 5

Internship Performance Evaluations

| Item/Variable | All Programs[a] | | | sig.[c] | Psychology[b] | | | | | | sig.[d] | Business/management[b] | | | | | |
| | | | | | Master's | | | Doctoral | | | | Master's | | | Doctoral | | |
	N	Freq	%		N	Freq	%	N	Freq	%		N	Freq	%	N	Freq	%
Interns' performance is formally evaluated	92	58	63.0	**	49	38	77.6	31	12	38.7	**	3	1	33.3	0	–	–
Who evaluates?																	
On-site supervisor	55	51	92.7		37	33	89.2	12	12	100.0		2	–	–	0	–	–
Higher-level supervisor	55	3	5.5		37	3	8.1	12	0	.0		2	–	–	0	–	–
Other co-worker	55	3	5.5		37	1	2.7	12	1	8.3		2	–	–	0	–	–
Customer/client	55	0	.0		37	0	.0	12	0	.0		2	–	–	0	–	–
Self	55	20	36.4	*	37	14	37.8	12	6	50.0		2	–	–	0	–	–
Faculty member	55	11	20.0		37	8	21.6	12	1	8.3		2	–	–	0	–	–
How often per internship?																	
Once	54	37	68.5		36	26	72.2	12	7	58.3		2	–	–	0	–	–
Twice	54	14	25.9		36	9	25.0	12	4	33.3		2	–	–	0	–	–
More than twice	54	3	5.6		36	1	2.8	12	1	8.3		2	–	–	0	–	–
How many performance dimensions?				*													
1 (overall)	50	4	8.0		33	2	6.1	11	2	18.2		2	–	–	0	–	–
2 to 5	50	11	22.0		33	9	27.3	11	1	9.1		2	–	–	0	–	–
6 to 10	50	11	22.0		33	7	21.2	11	2	18.2		2	–	–	0	–	–
11 to 20	50	13	26.0		33	7	21.2	11	4	36.4		2	–	–	0	–	–
> 20	50	1	2.0		33	1	3.0	11	0	.0		2	–	–	0	–	–
Varies from internship to internship	50	10	20.0		33	7	21.2	11	2	18.2		2	–	–	0	–	–
How long to evaluate (per intern)?				#													
< 1 minute	49	1	2.0		34	1	2.9	10	0	.0		2	–	–	0	–	–
2 to 5 minutes	49	9	18.4		34	6	17.6	10	3	30.0		2	–	–	0	–	–
6 to 10 minutes	49	13	26.5		34	9	26.5	10	1	10.0		2	–	–	0	–	–
11 to 20 minutes	49	14	28.6		34	10	29.4	10	3	30.0		2	–	–	0	–	–
> 20 minutes	49	12	24.5		34	8	23.5	10	3	30.0		2	–	–	0	–	–
How are performance data used?																	
Grading (e.g., pass/fail)	53	38	71.7		37	26	70.3	11	7	63.6		2	–	–	0	–	–
Offering feedback to the intern	53	50	94.3		37	35	94.6	11	10	90.9		2	–	–	0	–	–
Validation research	53	7	13.2	*	37	5	13.5	11	2	18.2		2	–	–	0	–	–

[a]Excluding non-US.

[b]Excluding non-US and on-line only.

[c]Chi square significance test comparing frequencies of programs in which internships are required versus optional; #p < .10, *p < .05, **p < .01, two-tailed.

[d]Chi square significance test comparing Masters and Doctoral program frequencies within psychology departments; *p < .05, ** p < .01, two-tailed.

Table 6

Internship Performance Failures and Problems

Sample/variable	N	Mean	SD	Skew		Median	Min	Max	sig.[c]
All Programs[a]									
Percentage of failed internships each year	80	.44	1.50	4.52	**	.0	0	10	
Percentage of interns with problems in given area									
Technical competence	70	1.67	4.69	3.71	**	.0	0	25	
Interpersonal interactions	72	2.81	3.66	1.01	**	.5	0	10	
Professionalism	71	1.85	3.10	1.66	**	.0	0	10	
Psychology maste'rs programs[b]									
Percentage of failed internships each year	43	.63	1.88	3.76	**	.0	0	10	--
Percentage of interns with problems in given area									
Technical competence	38	.87	2.17	2.86	**	.0	0	10	--
Interpersonal interactions	39	2.31	3.13	1.20	**	.0	0	10	--
Professionalism	39	1.79	3.06	1.68	**	.0	0	10	--
Psychology doctoral programs[b]									
Percentage of failed internships each year	27	.26	.98	4.66	**	.0	0	5	--
Percentage of interns with problems in given area									
Technical competence	24	2.50	6.43	2.95	**	.0	0	25	--
Interpersonal interactions	24	3.46	4.26	.72		.5	0	10	--
Professionalism	24	1.75	3.07	1.88	**	.0	0	10	--

*p < .05, **p < .01, two-tailed

[a]Excluding non-US.

[b]Excluding non-US and on-line only.

[c]Comparing master's and doctoral program means within psychology departments using the *t*-test (no sig. differences obtained)

Interestingly, the proportion is double in (psychology) master's programs (78%) over doctoral programs (39%). Perhaps intern performance at the doctoral level is of lesser concern owing to the noted lengthier preparation and higher selection standards. No other differences between degree types are evident on the performance appraisal variables.

Not surprisingly, onsite supervisors are the primary evaluators (93%). Roughly one in three programs seeks self-ratings and one in five seeks evaluations from faculty members. Self-ratings are more common in programs requiring internship (47% vs. 19% where optional). The norm for number of evaluations per internship is one (68.5%), although 26% of programs collect two rounds. Few programs (8%) rely solely on a single overall rating and only one (2%) reported using more than 20 dimensions. The number of dimensions within this range varies considerably. One in five programs uses a different number across internships, perhaps reflecting reliance on organization-specific appraisals. Programs requiring internships are more likely to use 11 to 20 dimensions (36% vs. 6% where optional) and less likely to use varied numbers of dimensions (9% vs. 41%). Corresponding to the variability in the number of dimensions used, the time needed to complete evaluations also varies considerably: The modal norm is 11 to 20 minutes, but shorter and longer intervals are also common. Programs requiring internships are more likely to use evaluations taking >20 minutes (33% vs. 6% where optional) and less likely to use evaluations taking 6 to 10 minutes (15% vs. 50%). The large majority (94%) of programs use evaluations for student feedback and, to a lesser extent (72%), for grading. Use of performance data for validation research is relatively rare (13%), although the rate is understandably higher where internships are required (21% vs. 0% where optional).

Further performance-related norms are offered in Table 6. A very small percentage of students (.4%) are reported to fail their internships, on average, although the failure rate reaches as high as 10%. Correspondingly, problems in specific skill domains are also relatively rare, means ranging from 1.7% (technical competence) to 2.8% (interpersonal interactions). Rates are not significantly different across degree types, although technical problems are slightly more common where internships are required (mean = 2.7%) versus optional (mean = .4%; *t* = 2.27, *p*

< .05, two-tailed). Taken at face value, the low rates of internship failure and problems suggest that the large majority of interns are adequately prepared to meet their internship demands and that prospective internship opportunities are adequately vetted. It is also possible that programs may underreport failures and problems for fear of the loss of confidentiality on potentially evaluative program features.

Internship Locations

Table 7 shows mean percentages of internship sites by degree type, employment sector, and geographical location. Results from the corresponding 2 x 4 x 4 repeated-measures ANOVA (with degree type as a between-subjects factor) are reported in Table 8. Significant main effects are evident for both sector and geographical location.[3] Private sector businesses are the most common internship sites (53%), followed by consulting firms (16%) and government offices (10%). Working in I-O program units (e.g., in-house consulting-type operations) is rare (2%), no doubt as a function of whether the host program maintains such a unit. Geographically, local sites are most common (for obvious reasons; 52%), national sites are second-most common (24%), followed by regional (16%), and international placements (8%). Why national sites outnumber regional, despite their increased distance, is unclear. It may be that regional opportunities are rarer. In addition, regional sites may be far enough away to render them practically equivalent to national sites (e.g., having to commute to a regional site 2 hours each way makes a move to a more distant national site less undesirable). Combining the two main effects makes local private-sector businesses the modal internship location for both master's and doctoral students (36% and 22%, respectively). Patterns for the two degree types are largely parallel. A significant degree-by-sector interaction, however, shows that master's students tend to work more in private-sector firms (58% vs. 39%) and doctoral students in consulting firms (35% vs. 21%), possibly reflecting higher demands for research skills in consulting work

Table 7

Mean Percentages of Internship Sites by Degree Type, Employment Sector, and Geographical Location

Employment sector/program type	Geographical Location				Sector sums
	Local	Regional	National	International	
Private sector business					
All[a]	32.5	8.2	7.5	4.5	52.8
Psychology master's programs	35.9	10.2	7.4	4.8	58.3
Psychology doctoral programs	21.8	6.8	6.2	4.4	39.2
Government					
All[a]	7.7	2.6	7.2	.1	17.6
Psychology master's programs	8.0	2.9	6.2	.0	17.1
Psychology doctoral programs	6.4	1.8	9.3	.4	17.9
Consulting firm					
All[a]	9.5	4.3	8.2	3.0	25.0
Psychology master's programs	7.9	2.8	7.8	2.6	21.1
Psychology doctoral programs	12.4	8.2	10.2	4.2	35.0
I-O program unit					
All[a]	2.4	.7	1.4	.1	4.6
Psychology master's programs	2.7	.7	.0	.1	3.5
Psychology doctoral programs	2.8	.8	4.2	.1	7.9
Site location sums					
All[a]	52.1	15.8	24.4	7.7	100.0
Psychology master's programs	54.6	16.7	21.3	7.4	100.0
Psychology doctoral programs	43.4	17.6	29.9	9.1	100.0

[a]Includes Business/Management programs; (NAll = 74a, NPsych MA = 41, NPsych PhD = 25)

[3] The main effect for degree type is moot because percentages per degree were set in the survey to sum to 100 across the 16 cells, assuring equivalent means for both degree types.

Table 8

ANOVA Results for Internship Locations

Effect	df	F	Partial η^2
Sector	3	32.69**	.34
Geography	3	20.35**	.24
Sector x Geography	9	9.06**	.12
Degree x Sector	3	4.76**	.07
Degree x Geography	3	1.12	.02
Degree x Sector x Geography	9	1.08	.02

**$p < .01$

"Top-10" Programs

As described in the previous articles in this series, the three "top-10" sets of I-O programs are incomplete as not all programs in each list responded to the survey. Gibby et al.'s list overlaps with Kraiger and Abalos' (K&A's) list for doctoral programs, so norms for these two sets are not independent. Several programs from the K&A master's list are in departments other than psychology and were dropped to allow cleaner comparisons to norms for psychology-based programs, the most prevalent in that list. For each of the three top-10 lists, comparisons with peer programs on the various internship features yielded few significant differences, summarized below.[4]

Of the seven Gibby et al. top-10 programs responding to this part of the survey, all make internships available to students, but none requires an internship. The latter compares to 42% of peer programs. When internships are engaged at the Gibby et al. programs, they occur only at or beyond the third year of study; this is also the mode for peer programs (79%), but substantially more of the latter (54%) allow students to start internships sooner, including 12.5% at the end of the first year. The Gibby et al. programs have fewer students engaged in year-long internships (11% vs. 39% for peer programs), and report fewer problems in technical competence (mean = 0% vs. 3.2%; $p < .10$, two-tailed) and professionalism (mean = 0% vs. 2.2%; $p < .05$, two-tailed). The Gibby et al. programs are significantly distinguished on no other internship variables, including number of placements per year, difficulty in arranging internships, pay, and policies and procedures.

The K&A top-10 doctoral programs are significantly distinguished on just three variables. Specifically, fewer students in those programs engage in internships 9 to 15 weeks in duration (mean = 0% vs. 14% for peer programs), average pay is higher (mean = $28.33 vs. $20.14 for peer programs), and problems in technical competence are less common (mean = 1.3% vs. 1.9%). Notably, the rate of statistically significant effects approaches chance expectations (3 of 52 tests = .058). In addition, perhaps with the exception of average pay, the noted differences are relatively trivial in practical terms.

A few more significant differences emerge with the K&A master's list. Of the seven programs on this list reporting data, two (29%) require prospective host sites to complete an intern request form, compared to 2 of 38 (5%) of peer programs; only one K&A master's program (14%) requires students to have completed preliminary coursework prior to internship, compared to 74% of peer programs; just three K&A master's programs (43%) use performance data for grading, compared to 77% of peer programs; and semester-long internships are less common in K&A master's programs than in peer programs (mean = 7.5% vs. 40%). The rate of significant effects slightly exceeds chance (4/65 = .062).

Looking at all the effects involving the three top-10 lists, few clear patterns emerge with respect to internships. That the Gibby et al. top-10 programs do not require internship is consistent with an emphasis on research in those programs; landing an academic job on graduation is better served by publication counts than by fieldwork experiences. When students in those programs do go on internship, however, it is only after 2 full years of coursework, which may contribute to the reported absence of problems in technical and professional competence (beyond effects due to higher selection standards). With respect to the two K&A lists, the only discernable pattern is that the top-10 master's programs appear more flexible and less formal in managing internships. Specifically,

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[4] For both the Gibby et al. and K&A doctoral lists, too few programs responded to the performance evaluation section to permit statistical comparisons on the associated 13 variables.

those programs reported less reliance on intern request forms, performance evaluation for grading, having students complete preparatory coursework, and semester-long internships. Because the K&A lists are based on student ratings, results tentatively suggest that master's students may especially appreciate program flexibility and informality, at least when it comes to internships.

Table 9

Results of Principal Components Analysis of Policy and Procedure Variables (N = 75)

Component label/input variable	Component				h^2
	I	II	III	IV	
Paperwork					
Formal contract	**.74**	.09	-.17	.14	.60
Intern request form	**.73**	.01	.07	-.22	.59
Internship application	**.67**	.02	.24	-.07	.50
Letter of agreement	**.63**	.06	.05	.09	.41
Concern for intern performance					
On-site expertise in HR/I-O	-.14	**.68**	.15	.18	.53
Students compete for top sites	.05	**.65**	.09	.01	.44
Preliminary coursework required	.25	**.53**	.14	-.13	.38
Performance evaluated	**.46**	**.50**	-.01	-.15	.48
Cultivated continuity					
Internship pre-approval	.08	**.51**	**-.67**	-.09	.72
Internship sites on-going	-.06	.39	**.66**	.11	.60
Primarily I-O or HR activities	.29	.17	**.54**	.15	.42
Opportunites catalogued	.07	.17	**.53**	-.28	.39
On-site degree credentials					
Masters in management/I-O	-.10	.14	.03	**.82**	**.70**
Doctorate in management/I-O	.07	-.12	.02	**.79**	.64
Eigenvalues	2.78	1.79	1.46	1.38	7.41
% variance explained	19.82	12.75	10.43	9.87	52.86

Internship Formality Composites

Some of the variables in this section of the survey permit reduction to a more manageable set (within limits imposed by modest *N*s). We targeted reduction in policies and procedures (see Table 4), in particular, as those variables are among the most conceptually aligned. An overall formality index was created by summing endorsements (i.e., 1s vs. 0s) to 13 of the policy and procedural items,[5] yielding alpha = .60, mean = 5.26, *s* = 2.78, and range = 0 to 11. The 13 items were also subjected to principal components analysis (PCA; listwise *N* = 75, subject-to-variable ratio = 5.8:1), yielding four orthogonal factors that account for 53% of the variance. Loadings, communalities (h^2), and eigenvalues are presented in Table 9. Component I is pretty clearly a bureaucracy dimension, which we label "Paperwork." Component II suggests concern for intern performance and is labeled accordingly. Component III is a little more nuanced, but the two strongest loadings suggest availability of renewable, solid I-O/HR internships, which lessens the need for yearly vetting. We label this component "Cultivated Continuity." The last factor captures the specific requirements that onsite supervisors hold a relevant academic degree, warranting the label, "Onsite Degree Credentials."

Correlating the overall formality index and four components with assorted remaining internship variables yielded results reported in Table 10. Consistent with earlier discussion, programs that require internships tend to treat them more formally (*r* = .24; *p* < .05, two-tailed). The component correlations clarify that this holds especially with respect

[5] Other items (e.g., "students are informed of internship opportunities") were dropped so as to increase alpha. Surviving items are listed in Table 9, per PCA results (see below).

to concern for intern performance ($r = .32$; $p < .01$, two-tailed). A similar pattern emerges for degree type: Internships tend to be more formalized in master's programs than in doctoral programs ($r = -.24$; $p < .05$, two-tailed) but especially regarding intern performance ($r = -.31$; $p < .01$, two-tailed). Doctoral programs, as might be expected, emphasize on-site degree requirements more so than do master's programs ($r = .23$; $p < .05$, one-tailed). Interestingly, average pay correlates with both Cultivated Continuity and Onsite Degree Credentials ($r = .33$ and $.34$, respectively; $p < .05$, two-tailed). The causal connections are uncertain, but higher paying internships may be especially desirable to maintain from year to year, not only because of pay per se, but (possibly) more so because of associated greater rigor in work demands, offering especially advantageous learning opportunities. Consistent with the continuity aspect of Component III, programs scoring higher on this factor reported less difficulty in arranging internships ($r = -.27$; $p < .05$, two-tailed).

Table 10

Correlations Between Policies and Procedures Components and Selected Other Variables

| | | | | Policies & procedures component | | | |
		Overall		Paper-	Concern	Cult.	On-site
Internship required	93	.24 *	75	.05	.32 **	.12	-.17
MA (1) vs. PhD (2)	93	-.25 *	75	-.09	-.31 **	.13	.23 #
Average pay	58	.11	51	-.07	.17	.33 *	.34 *
Difficulty to arrange	91	-.14	75	-.18	.03	-.27 *	.07
N internships per year	81	.26 *	70	.24 *	.02	.00	-.03
Internship duration							
< 5 weeks	81	-.13	68	.15	-.20	-.22 #	.08
6 to 8 weeks	81	-.29 **	68	-.18	-.14	.16	-.20
9 to 15 weeks	81	.06	68	-.27 *	.17	-.06	-.18
1 semester	81	.26 *	68	.22 #	.23 #	.07	-.15
2 semester or 3 quarters	81	.00	68	.20 #	-.17	-.04	.21 #
Full year	81	-.12	68	-.13	-.13	.06	.20
Student (vs. faculty) effort	87	.07	75	.22 #	.08	.22 #	-.10
% failure	80	.16	73	.06	.13	.03	-.06
% technical problems	70	.16	63	.16	-.05	.08	.07
% interpersonal problems	72	.12	65	.01	-.14	.16	-.07
% professionalism problems	71	.11	64	.21 #	-.07	-.10	-.20
K&A Doctoral	33	.03	23	.01	.32	-.05	-.20
K&A Masters	49	-.10	43	.06	-.14	-.17	.03

#$p < .10$. *$p < .05$, **$p < .01$, two-tailed

[a]*N*s are reduced from values at left due to listewise deletion in deriving principal components.

Moving down the table, programs with more formal approaches to internship (overall) tend to have more students on semester-long placements ($r = .26$; $p < .05$, two-tailed) and fewer on shorter placements, reflecting stronger adherence to traditional academic timelines. The paperwork and performance-focused aspects of internship formality ($r = .22$ and $.23$, respectively; $p < .10$, two-tailed) appear to be the primary drivers of the main relationship. Programs with more paperwork appear to expect students to complete that paperwork ($r = .22$, $p < .10$, two-tailed). Greater student involvement is also associated with Cultivated Continuity ($r = .22$; $p < .10$, two-tailed), suggesting that established internships still require active student pursuit.

Notable correlations involving the three top-10 lists are few. Perhaps not surprisingly, the Gibby et al. programs, identified by high research productivity, seek more strongly than peer programs to ensure that onsite supervisors have relevant academic degrees ($r = .36$; $p < .05$, one-tailed).

Internship Availability and Requirement in Relation to Program Attractiveness

In an effort to gauge how much applicants may be influenced by whether internships are available and whether, if available, they are required, we correlated these two dichotomous variables (as predictors) with both

average number of applicants per year and average percentage of accepted applicants choosing to attend (as outcomes). We also correlated the two applicant variables with the overall formality index and the four formality components. [6]

Table 11

Correlations Between Selected Internship Variables and Number of Applicants per Year and Percentage of Accepted Applicants

Program/criterion	Int'ship available		Int'ship required		Overall Formality		Paper-work		Concern for Perf.	Cultivated Continuity		On-site Deg. Cred.	
All psychology programs (*Ns* = 63-90)													
N of applicants / yr	.03		-.32	**	.11		-.01		.09	.18		.15	
% of accepted enrolled	-.22	*	.18	#	.09		.20		.06	.05		.25	*
Psychology master's programs (*Ns* = 40-51)													
N of applicants / yr	.19		-.27	#	.31	*	.11		.18	.12		.16	
% of accepted enrolled	-.26	#	.08		.06		.12		-.11	.11		.25	
Psychology doctoral programs (*Ns* = 23-39)													
N of applicants / yr	-.04		-.39	*	-.18		-.42	*	-.13	.39	#	.16	
% of accepted enrolled	-.23		.30	#	.10		.32		.19	-.01		.31	

Results, shown in Table 11, suggest that whether or not internships are available is not significantly related to number of applications per year for all psychology programs combined and per degree type. It is, however, negatively related to the percentage of accepted applicants choosing to attend. Requiring an internship, on the other hand, is negatively related to number of applicants but, at least in doctoral programs, positively related to percentage of acceptees choosing to attend. These findings suggest that requiring an internship may be perceived negatively by prospective applicants regardless of fit but that it increases the program's attractiveness to applicants the program judges to be a good fit. A possible upshot here is that requiring internships may serve to filter out low-fit applicants, reducing the burden of application review.

Correlations involving the formality variables suggest that master's applicants may be attracted by overall formality whereas doctoral applicants may be attracted by ongoing internship opportunities (as per Cultivated Continuity) and avoidant of bureaucratic practices (as per Paperwork). Requiring that onsite internship supervisors have an advanced degree may be attractive to good-fit psychology program applicants generally.

General Discussion

The applied side of I-O psychology is no better realized during graduate training than in internships. The most dominant theme to emerge from the internship portion of the survey is that internships are highly variable across I-O programs. This appears in almost every respect, including whether or not internships are available (20% of programs said no), whether they are required (<50% of programs making internships available make them a requirement), when internships are engaged, how long they are, whether formal contracts are used, whether students need to complete preliminary coursework, whether on-site supervisors must have certain credentials, whether intern performance is formally evaluated, whether self-ratings are used, the number of performance dimensions assessed, how appraisals are used, intern pay, the difficulty of arranging internships, and even the stability of internship arrangements from year to year.

Some of the variance is accounted for by degree type: Master's students tend to engage internships in their second year and doctoral students, in their third year or beyond; master's programs seek more often to preapprove internships; doctoral programs more often require onsite supervisors to hold a PhD in a relevant area and to have internships that tend to be longer, better paid, and situated more often in consulting firms and less often in private-

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[6] Not available = 0, available = 1; not required = 0, required = 1. Also, controlling for program size, as per *N* of graduates/year, had negligible impact. Results are available on request.

sector businesses. Offering a parsimonious reduction in the number of comparative dimensions, the four internship formality factors (e.g., Paperwork, Concern for Intern Performance, etc.), derived from exploratory analysis, clarify the nature of program differences but those differences remain substantial: I-O psychology programs are highly variable in internship management practices, even within degree types (in psychology departments) and when that variability is meaningfully packaged.

Such variability across programs raises questions as to whether I-O psychology as a field might benefit from increased standardization of internship management practices and requirements. The proportion of programs requiring internships overall is a fairly modest 38%. It is interesting that students tend to engage internships even when they are not required to: Students appear to value fieldwork experience for its own sake. It is also interesting that requiring an internship may enhance a program's attractiveness to especially desirable applicants. Relations involving the top-10 lists offer limited support for program quality being linked to internship features. Master's programs report a higher rate of internship requirement, reflecting their more practitioner-focused identity. Detailed review of whether doctoral-level training might be enhanced by requiring internships is beyond the scope of this descriptive effort. There is certainly something to be said for program autonomy in how internships are managed; one-size-fits-all is very unlikely to be broadly accepted with respect to any aspect of graduate training, perhaps especially so with respect to internships in light of the noted variability. Current results offer grounds for reasoned discussion of this and related matters.

Looking ahead, we turn our attention next to comprehensive exams in I-O graduate programs, their content, administration, and grading, and, as usual, to how such features vary between degree and department types. Until then, we hope results presented here help programs see how their approach to internships compares to that of peer programs and consider how they might modify their internship practices to better meet their students' needs. We further hope our findings stimulate productive discussion of internship management practices relevant to graduate training in I-O more broadly.

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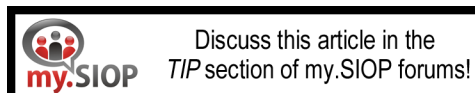
The Knowledge and Skills Employers Desire When Hiring an I-O Psychologist

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In 1987, Wesolowski and Field sent questionnaires to consulting firms and business organizations that had hired an I-O psychologist or were planning to hire one within the next 5 years. The 56 participants rated the importance of the various I-O psychology content areas, statistical methods, and research and measurement issues for I-O psychology positions. We replicated their study because we wondered whether the field had changed somewhat over the past 25 years. Not only were we curious about what knowledge and skills I-O psychology graduates need to possess to succeed in today's business world, we thought the results might be useful for curriculum development in I-O psychology graduate programs or for the professional development of practicing I-O psychologists.

In their exploration of I-O psychology content areas, Wesolowski and Field (1987) found that the five most important areas were (a) personnel selection and placement; (b) performance appraisal; (c) job and task analysis; (d) ethical, legal, and professional contexts; and (e) training, a strong showing from the industrial side of the field. In their exploration of I-O psychology research areas, Wesolowski and Field found that basic statistical concepts were very important. Businesses rated psychometric methods as very important, followed by survey research methods, and test construction and usage. Consulting firms, on the other hand, rated attitude measurement methods highest, followed by survey research methods, and psychometric methods.

In a 1990 study of I-O psychology graduates from a single program, Erffmeyer and Mendel (1990) found that most students felt the program prepared them well for future employment. Of the graduate courses taken, personnel psychology was ranked the most important for one's first and current job. While the rankings shifted depending on whether it was for first job or present employment, the next three important courses were training in industry, equal employment opportunities, and psychometrics.

Trahan and McAllister (2002) surveyed recent graduates from 53 I-O psychology master's programs in order to find out what competencies were most important to the graduates in their current job. The researchers wanted to expand on Erffmeyer and Mendel's 1990 study by increasing the number of programs surveyed. The graduates identified job analysis, training, and selection to be the most important competencies after graduation. On the research side, the graduates indicated that there had been a strong emphasis on research and statistical methods during their graduate studies but that these competencies were only moderately important in their current jobs.

From these studies, it appears that the traditional industrial psychology content areas, such as job analysis, legal and ethical issues, employee selection, training, and performance appraisal, consistently remain important for the job of an I-O psychologist. In addition, some knowledge of statistics and research methods is also important but perhaps less so for master's level positions.

In open-ended comments, Wesolowski and Field (1987) found that many participants were concerned about recruiting I-O psychologists who lacked business skills. One participant wrote, "Many of the I-O psychologists that I interview have little real business understanding re: operations, financial, marketing, and strategic issues." Other business skills that the participants desired in an I-O psychologist included communication and interpersonal skills, and experience in managing projects. A study of I-O psychologists by Blakeney et al. (2002) found room for improvement for I-O psychologists in the applied areas and suggested that "more emphasis should be placed on the practitioner side of our scientist–practitioner model" (p. 30) during graduate training. We relied on Blakeney et al.'s list of common duties and tasks that I-O psychologists perform (such as administrative management, project management, report writing, making presentations, personnel management, and personal professional development) to examine whether some are more or less important. We also added business development and conflict management based on a focus group study of I-O psychology alumni from Emporia State University's master's program.

The Current Study

To study what competencies are most important for I-O psychologists to have on the job, we surveyed both supervisors of I-O psychologists and working I-O psychologists. Ninety-seven responded to our survey. Using a six-

point Likert scale that ranged from 1 = *very unimportant* to 6 = *very important*, the participants were asked to rate how important it is for a new I-O psychologist to have knowledge or skills in the following four areas: (a) 21 core content areas designated by SIOP's guidelines for graduate training programs in I-O psychology, (b) 14 statistical methods, (c) nine research and measurement methods, and (d) eight business skills.

To obtain participant addresses, we found organizations that were advertising for I-O psychology positions and contacted the person leading the search. We also contacted graduates from I-O psychology graduate programs. A total of 673 surveys were sent out: 374 were emailed and 299 were sent via regular mail. The response rate was 24% for regular mail and 6% for email. In Wesolowski and Field's 1987 study, organizations advertising for I-O psychology positions were contacted as well as "those organizations listed as the affiliation of individuals who had published articles or book reviews in *Personnel Psychology* or the *Journal of Applied Psychology* in the last five years" (p. 17). Unlike Wesolowski and Field's study, we included I-O psychologists working in educational settings.

Of the 97 participants who responded to our survey, 7% had only a bachelor's degree, 41% had a master's degree, and 52% had a doctorate. When examining type of degree, 89% had an I-O psychology degree and 11% did not. When asked whether they were describing their own job or the job they supervised, 69% responded that they were describing their own job and 31% responded that that they were describing the job they supervised. Regarding the size of the organizations in which the participants worked, the average organization had 21,912 employees, but the median organization only had 550 employees. In seems there were a few large organizations that skewed the data. This can be seen in the large standard deviation of 58,078 and the range of organizations from one employee to 280,000 employees.

I-O Psychology Content Areas

Table 1 depicts the mean importance of 21 different I-O psychology content areas today as compared to the Wesolowski and Field (1987) study that surveyed 17 I-O psychology content areas. Although traditional industrial psychology content areas were rated high in importance 25 years ago and again today, we found that leadership and management theories were rated the highest among the respondents. In 1987, leadership and management were ranked ninth out of 17 content areas. This was the biggest jump in importance from 1987 to today.

This increase in the importance of leadership and management theories to practicing I-O psychologists may be due to the recent explosion in companies using executive coaches. In recent years there has been an increase in the use of executive coaches within organizations. A primary reason for hiring executive coaches is to develop better leaders, whether that means strengthening already good leaders or improving those who are lacking critical competencies. Bolt (2006) found that 71% of the senior executive teams and 43% of chief executive officers had worked with a coach. Within the organizations Bolt investigated, 63% plan to increase their use of coaches and 92% of leaders plan on using a coach again. Many I-O psychologists may be entering this lucrative field of consulting.

For the job he or she was rating, each respondent was asked what type of degree was required. A doctorate was required for 39% of the I-O psychology jobs, a master's degree was required for 38% of the jobs, and either a master's degree or a doctorate was acceptable for 23% of the jobs. We were interested in whether the type of education required to fill a position was related to what kind of knowledge and skills were deemed important. As can be seen in the three middle columns of Table 1, significant differences emerged for compensation and benefits (F (2,84) = 6.11, $p < .01$) and criterion theory and development ($F(2,85) = 4.90$, $p < .01$). Because of the large number of statistical analyses run for our exploratory analyses, we set the alpha level to .01 for our study. For jobs that required a master's degree, knowledge of compensation and benefits was more important compared to jobs requiring a doctorate or a master's or a doctorate. Conversely, for jobs that required a doctorate, knowledge of criterion theory and development was more important compared to jobs requiring only a master's degree. Jobs requiring either a master's degree or a doctorate fell in between.

For master's-level positions, there is a strong emphasis on industrial psychology topics that focus on the nuts-and-bolts human resources issues. On the other hand, for PhD level positions, the five most important content areas were: leadership and management; organizational development; ethical, legal, and professional contexts; criterion theory and development; and employee selection, placement, and classification. The top two are organizational psychology topics that focus more on a systemic understanding of organizations.

The respondents were also asked to categorize the type of organization for which they (or the I-O psychologists under them) worked. Consulting organizations had the most representation (32%), followed by industrial organizations (30%), educational organizations (26%), and government organizations (12%). The four columns on the right of Table 1 depict the

Table 1

Mean Importance of 21 Content Areas Today Compared to 1987, by Degree Required, and by Organizational Categories

	Today			1987		Degree required		MA/MS or	Organizational category			
	N	M	SD	N	M	MA/MS	PhD	PhD	Govt	Cons	Ind	Ed
1. Leadership & management	96	5.06	1.1	53	4.2	4.79	5.4	4.9	4.67	5.1	4.89	5.4
2. Ethical, legal, & professional contexts	96	5.04	1.3	53	4.8	5.36	5.06	4.62	4.5	4.81	5.32	5.28
3. Employee selection, placement, & classification	96	4.92	1.53	53	5.3	5	4.89	4.86	4.25	5.13	4.96	4.92
4. Job & task analysis	96	4.86	1.2	53	4.9	4.88	4.86	5	5.5	5.06	4.46	4.76
5. Work motivation	96	4.73	1.21	53	4.6	4.88	4.83	4.24	3.92	4.84	4.75	4.96
6. Performance appraisal & feedback	96	4.72	1.34	53	5.1	4.91	4.83	4.19	3.83	4.84	4.75	4.96
7. Organizational development	95	4.63	1.32	53	4.4	4.51	5.09	4.05	3.83	4.93	4.54	4.76
8. Core competencies analysis	94	4.6	1.24	na	na	4.53	4.83	4.55	5.09	4.67	4.61	4.28
9. Training: Theory, program design, & evaluation	96	4.59	1.28	53	4.7	4.73	4.6	4.38	4.58	4.23	4.61	5.04
10. Judgment & decision making	95	4.53	1.17	53	3.7	4.7	4.68	4.1	4.42	4.52	4.67	4.44
11. Criterion theory & development	94	4.5	1.38	na	na	3.97 b	4.94 a	4.76	4.45	4.58	4.07	4.88
12. Strategic management	95	4.23	1.45	na	na	4.45	4.31	3.7	3.67	4.23	4.46	4.24
13. Organization theory	95	4.19	1.35	53	4.4	4	4.63	3.67	3.42	4.32	4.04	4.56
14. Small group theory & processes	96	3.89	1.34	53	4.1	3.82	4.37	3.33	3.33	3.94	3.5	4.52
15. Career development theory	95	3.81	1.41	na	na	4	3.89	3.24	3.25	3.77	3.96	3.96
16. Human performance/human factors	95	3.77	1.5	53	2.5	3.84	3.94	3.33	3.83	3.57	3.61	4.16
17. Attitude theory	95	3.64	1.48	53	4	3.67	3.74	3.24	3.5	3.58	3.57	3.88
18. Industrial & labor relations	96	3.64	1.52	53	3.2	4	3.43	3.33	4.08	3.65	3.57	3.48
19. Health & stress in organizations	96	3.47	1.49	53	3.1	3.48	3.94	2.76	2.83	3.26	3.29	4.24
20. Compensation & benefits	94	3.39	1.68	53	3.8	4.09 a	3.03 b	2.71 b	3.17	2.77 b	4.22 a	3.36
21. Consumer behavior	95	2.77	1.42	53	2.6	3.06	2.8	2.24	2.42	2.45	3.32	2.71

Note: "na" means that the 1987 survey did not provide that choice.
p < .01 for ANOVA, alphabetic subscripts designate which means are significantly different using a Tukey post hoc test with *p* < .01

Table 2

Mean Importance of Statistical Knowledge Today Compared to 1987, by Degree Required, and by Organizational Categories

	Today			1987		Degree required		MA/MS or	Organizational category			
	N	M	SD	N	M	MA/MS	Phd	phd	Govt	Cons	Ind	Ed
1. Statistical computer packages (spss, sas)	96	4.49	1.62	53	4.6	3.68 b	5.21 a	4.90 a	4.67	4.48	3.92	5.04
2. Basic statistical concepts (descriptive statistics)	97	5.30	1.16	53	5.2	4.85 b	5.66 a	5.57	5.25	5.52	4.93	5.48
3. Univariate methods (t-tests, anova, correlation, etc)	97	4.60	1.57	53	4.9	3.88 b	5.17 a	4.90 a	4.50	4.61	4.10	5.20
4. Non-parametric methods (e.g., chi-square)	97	3.95	1.64	53	3.7	3.15 b	4.77 a	4.05	4.17	3.90	3.31	4.64
5. Multivariate methods (in general)	88	4.07	1.65	53	4.0	3.29 b	4.94 a	4.17	3.75	4.04	3.68	4.67
a. Multiple regression	97	4.28	1.69	Na	Na	3.41 b	5.11 a	4.52	3.67	4.42	3.93	4.80
b. Factor analysis	97	4.03	1.67	53	4.1	3.29 b	4.80 a	4.19	3.33	4.13	3.62	4.72
c. Manova	97	3.43	1.53	Na	Na	2.74 b	4.34 a	3.29	2.75	3.52	3.00	4.16
d. Structural equation modeling	97	3.28	1.53	53	2.6*	2.74 b	4.09 a	3.14	2.92	3.29	2.86	3.90
e. Log linear analysis	95	2.96	1.36	Na	Na	2.55 b	3.54 a	2.85	2.55	2.87	2.79	3.44
f. Cluster analysis	97	3.24	1.39	53	3.5	2.79 b	3.80 a	3.14	3.00	3.10	3.34	3.40
g. Discriminant analysis	97	3.27	1.43	Na	Na	2.88	3.77	3.24	2.92	3.23	3.31	3.44
h. Multidimensional scaling	97	3.11	1.37	53	2.9	2.85	3.49	3.14	2.67	2.97	3.17	3.44
i. Time series analysis	96	3.10	1.43	53	2.6	2.71	3.60	3.10	2.55	2.87	3.34	3.36

Note: "na" means that the 1987 survey did not provide that choice.
* In 1987, "Path Analysis" was the choice
p < .01 for ANOVA, alphabetic subscripts designate which means are significantly different using a Tukey post hoc test with *p* < .01

importance of the 21 I-O psychology content areas by organizational categories. One significant difference emerged for compensation and benefits ($F(3,90) = 4.02$, $p < .01$). A Tukey post hoc analysis revealed that knowledge of compensation and benefits is more important for I-O psychologists working in industry compared to those working as external consultants. Those working in government or education fell in between. I-O psychologists do not work in the area of compensation and benefits very much. In governmental and educational settings, the compensation plans are somewhat rigid. However, in private industry, compensation and benefits are important tools for strategic human resource management. In addition, compensation and benefits may be more important for master's level I-O psychology jobs because they are more administrative, and less research-based, in nature.

In a follow up analysis, we combined the results from government, consulting, and industry so that we could compare practitioners and educators. We found that the educators scored significantly higher in rating the importance of health and stress in organizations ($t(94) = -3.16$, $p < .01$) and small group theory and processes ($t(94) = -2.85$, $p < .01$). It strikes us as unfortunate that those working in the ivory towers are more concerned about health and stress in organizations because one of the goals of an I-O psychologist is to improve the quality of work life for employees. If organizational decision makers are not interested in the health of their workers, it may be difficult for I-O psychology practitioners to make inroads in this area. In addition, it struck us as interesting that practitioners would rate small group theory and processes as only moderately important, while leadership theories are at the top of the list, especially for consultants. However, unlike students in the field of mental health who are asked to not only take classes in group dynamics, group therapy, and family therapy, but also to lead groups and receive supervision on their efforts, I-O psychology students are less likely to get this hands-on training in group dynamics. Thus, perhaps they feel less comfortable offering group based interventions, such as team building and conflict resolution. We cannot help but wonder what Kurt Lewin would think of this finding.

Statistical Knowledge

Table 2 compares our data with Wesolowski and Field's 1987 data on the importance of 14 statistical methods. In Wesolowski and Field's research, 10 statistical methods were analyzed. Basic statistical concepts (descriptive statistics) was clearly rated the most important in both studies, followed by univariate methods. In both studies, a number of multivariate techniques hovered around an average of three (*slightly unimportant*). Multiple regression was rated as the most important multivariate technique in our study. Although not all I-O psychologists have to be expert statisticians, they will need to be comfortable working with numbers.

The amount of knowledge of statistical methods required by an I-O psychologist differed a great deal depending on the degree required for the job. Not surprisingly, knowledge of inferential statistics of all kinds (e.g., non-parametric, multivariate, etc.) was more important for doctoral positions than for master's level positions. As the three middle columns of Table 2 illustrate, for jobs that require a PhD, knowledge of all types of statistics is more important: statistical software ($F(2,86) = 10.39$, $p < .01$), descriptive statistics ($F(2,87) = 5.25$, $p < .01$), univariate inferential statistics ($F(2,87) = 7.36$, $p < .01$), nonparametric statistics ($F(2,87) = 10.59$, $p < .01$), and multivariate statistics ($F(2,78) = 9.54$, $p < .01$). Tukey post hoc analyses revealed that jobs that require either a doctorate or master's sometimes fell in between in their importance ratings and sometimes aligned with the doctoral positions.

Although no statistically significant differences regarding the importance of statistical methods emerged between I-O psychologists working in the four types of organizations, the means were consistently higher for I-O psychologists working in educational settings. These results are presented in the four columns on the right in Table 2. In a follow up analysis, we combined the results from government, consulting, and industry so that we could compare practitioners and educators. We found that the educators scored significantly higher, at the .01 level, in only one method, MANOVA ($t(95) = -2.87$, $p < .01$).

Research/Measurement Skills

In Table 3, the importance of nine research and measurement skills from our study are compared to seven research and measurement skills from Wesolowski and Field's 1987 study. In both years, survey research methods and classic psychometric methods were rated highest. However, in Wesolowski and Field's study, classic psychometric methods were first and survey research methods second, and in our study the order is reversed. Many master's level I-O psychology programs offer statistics and research classes, but there are fewer that offer classes on

Table 3

Mean Importance of Research/Measurement Skills Today Compared to 1987, by Degree Required, and by Organizational Categories

	Today			1987		Degree required			Organizational category			
	N	M	SD	N	M	MA/MS	PhD	MA/MS or PhD	Govt.	Cons.	Ind.	Ed.
1. Survey research methods (questionnaire development)	97	5.05	1.20	53	5.1	4.76	5.34	5.14	4.92	5.16	4.93	5.12
2. Classic psychometric methods (reliability, validity)	97	4.91	1.47	53	5.3	4.47	5.49	5.05	5.08	5.03	4.55	5.08
3. Test construction	96	4.56	1.53	53	4.8	4.15	4.94	4.76	4.75	4.77	4.07	4.80
4. Attitude measurement methods	97	4.35	1.49	53	4.9	4.21	4.63	4.24	3.75	4.71	4.10	4.48
5. Sampling theory (designing & drawing samples)	97	4.33	1.47	53	4.3	3.88	4.89	4.29	4.25	4.32	4.21	4.52
6. Personality assessment methods	97	4.33	1.57	53	4.3	4.38	4.49	4.33	3.58	4.90	4.07	4.28
7. Research/experimental design (including quasi designs)	96	4.27	1.59	53	4.4	3.71 [b]	5.00 [a]	4.43	3.83	4.30	4.00	4.76
8. Intelligence assessment methods	97	4.12	1.53	na	na	4.12	4.31	4.19	3.50	4.74	3.83	4.00
9. Latent trait & item response theory	97	3.46	1.49	na	na	3.09	3.94	3.67	3.25	3.65	3.07	3.80

Note: "na" means that the 1987 survey did not provide that choice.
$p < .01$ for ANOVA, alphabetic subscripts designate which means are significantly different using a Tukey post hoc test with $p < .01$

Table 4

Descriptive Statistics for the Importance of Business Skills by Degree Required, and by Organizational Categories

	Today			Degree required			Organizational category			
	N	M	SD	MA/MS	PhD	MA/MS or PhD	Govt	Cons	Ind	Ed
1. Making presentations	97	5.42	0.80	5.32	5.51	5.52	5.25	5.29	5.48	5.60
2. Project management	96	5.36	0.77	5.50	5.37	5.25	5.67	5.32	5.43	5.20
3. Report writing	97	5.22	1.03	4.91	5.46	5.33	5.50	5.52	4.83	5.16
4. Personal professional development	97	4.97	0.99	5.00	5.03	4.76	4.25	5.16	4.90	5.16
5. Conflict management	96	4.55	1.24	4.94	4.13	4.52	4.00	4.23	5.03	4.62
6. Administrative management (planning, budgeting)	97	4.46	1.28	4.74	4.03	4.38	4.00	4.35	4.97	4.24
7. Personnel management (recruiting, coaching)	97	4.42	1.37	4.65	4.17	4.33	3.75	4.35	4.72	4.48
8. Business development	96	4.25	1.36	4.38	4.20	3.75	3.36 [b]	4.71 [a]	4.55 [a]	3.72

Note: These items were not included on the 1987 survey.
$p < .01$ for ANOVA, alphabetic subscripts designate which means are significantly different using a Tukey post hoc test with $p < .01$

psychometrics or survey research methods. Our results indicate that not offering these types of classes may be a disservice to master's level I-O psychologists.

In our study, latent trait and item response theory received the lowest score. It was not an option in Wesolowski and Field's (1987) study. Intelligence assessment was also not included in Wesolowski and Field's study, and it was rated as the eighth most important measurement skill out of nine skills in our study.

The only significant difference in the importance of research and measurement methods for jobs requiring different degrees was knowing about research and experimental designs ($F(2,86) = 7.13$, $p < .01$). As the three middle columns in Table 3 depict, this type of knowledge is more important for jobs that require a PhD compared to those that require only a master's degree. A Tukey post hoc analysis revealed that jobs that require either a doctorate or master's fell in between in their importance ratings. For all of the research and measurement skills, master's level students should be aware that future employers expect I-O psychologists to know about survey research and classic psychometric methods. Doctoral students will, of course, have higher expectations placed on them to learn how to conduct research proficiently. This includes critical thinking, coming up with hypotheses, manipulating variables, choosing experimental designs, establishing the reliability and validity of measures, choosing sampling procedures, knowing how to measure the relationship between variables, and so on (SIOP, 1999). As the SIOP guidelines explain, master's level students may need more guidance in complex situations involving these methods (SIOP, 1994).

No statistically significant differences emerged between I-O psychologists working in the four types of organizations related to the importance of measurement methods. These results are presented in the four columns on the right in Table 3. In a follow up analysis, we combined the results from government, consulting, and industry so that we could compare practitioners and educators. Again, no statistically significant differences emerged.

However, although the differences were not statistically significant, the importance of personality and intelligence assessment was highest for I-O psychologists working as consultants. The importance of personality assessment to consulting I-O psychologists may be due to the breakthrough research in the five-factor model of personality. Not only has this model helped to predict job performance, it has also been found to predict effective leadership (Bono & Judge, 2004; Judge, Bono, Ilies, & Gerhardt, 2002; McCormick & Burch, 2008). Perhaps one of the reasons I-O psychologists are more interested in leadership theories today, as was noted earlier, is that I-O psychologists are enjoying greater success in identifying the traits required for successful leader selection and development.

In 1990, Howard estimated the percentage of SIOP members conducting individual psychological assessments (IPA) to be about 33%. In a recent article, Silzer and Jeanneret (2011, p. 270) wrote, "We suspect that over the last 20 years the number of I-O psychologists conducting individual assessments has noticeably increased. IPA is now routinely offered by consulting firms and independent consultants as part of assessment services." In a related article, Jeanneret and Silzer (2011, p. 350) noted that their book, *Individual Psychological Assessment* (1998), "is one of the top selling SIOP books." Perhaps this increased interest in personality assessment is seen mostly in the consulting world because overall we found no change in the importance of personality assessment from 1987 to today.

expertise in compensation might be another way for an I-O psychologist to distinguish himself or herself, and a focus on executive compensation might tie in nicely to improving the quality of leadership in organizations.

In the area of research, we feel that master's students might benefit from classes on psychometrics or survey research methods.

Wesolowski and Field (1987) found that many I-O psychologists lacked business skills. The three most important skills noted in our study—making presentations, project management, and report writing—are typically taught across the curriculum. However, some of the other skills, such as business development or conflict management, are not. I-O psychology students would be wise to pick up some of these additional skills in their universities' business school (business development) or mental health classes (conflict management).

We hope that the results of this survey may serve as a guide for I-O psychologists when they are in school and once they start working to identify the skills and areas of knowledge that are most valued in the workplace. These results can also guide I-O psychology graduate programs in their decisions about curriculum development as they prepare their students for life after graduate school.

Nonetheless, graduate students in I-O psychology may want to learn more about IPA. Although SIOP recognizes individual assessment as an "area of competence" that should be developed in PhD I-O psychology programs, Silzer and Jeanneret's (2011) observed, "We know of few PhD level graduate programs in I-O psychology that offer individual assessment courses or experiences." They go one to say that one reason is probably because the faculty are not qualified to teach IPA. Thus, students may need to pick up these skills elsewhere, probably in clinical psychology classes and maybe in consulting internships where IPA is performed. These skills could prove lucrative for an I-O psychologist. Moses (2011) estimates an average billing cost of $7,000 for assessing an executive. To earn that money, 8 or more hours would need to be invested, including prework of examining 360 degree appraisal data and other sources of information about the executive.

Relatedly, graduate programs in I-O psychology that want to differentiate themselves in the educational marketplace from other programs may want to consider offering a class on IPA. Two examples of I-O psychology programs that offer such a class are the University of Akron and Baruch College, CUNY.

Business Skills

The importance of eight business skills for I-O psychologists are depicted in Table 4. None of these items were included in Wesolowski and Field's 1987 study. The three most important skills were making presentations, project management, and report writing. None of the skills were rated as unimportant. Even the least important skill, business development, had an average score of 4.25 (moderately important). Fortunately, many of these skills are taught across the curriculum. For example, students often have to make presentations and write reports in several classes. Students who have to write a thesis or a dissertation receive a great lesson in project management.

There were no significant differences in the importance of business skills based on the degree required for the job. These results appear in the middle three columns of Table 4.

The four columns on the right of Table 4 depict the importance of nine business skills across the four organizational settings. The only significant difference found was the importance of business development skills ($F(3,92) = 5.04$, $p < .01$). A Tukey post hoc analysis revealed that business development skills are more important for I-O psychologists working in consulting or industry compared to those working in government. Those working in education fell in between. Whether working in a large company or for a smaller consulting firm, I-O psychologists who

work in the for-profit world must be more concerned about business development compared to academicians and government workers. In a follow up analysis, we combined the results from government, consulting, and industry so that we could compare practitioners and educators. No statistically significant differences emerged.

Conclusion

We had two goals in replicating Wesolowski and Field's 1987 study. We wanted to see whether the knowledge and skills I-O psychologists graduates need to succeed in today's business world had changed over the past 25 years. We also wondered if these changes might have some implications for curriculum development in I-O psychology graduate programs and/or professional development of practicing I-O psychologists.

Not surprisingly, the traditional industrial psychology content areas are as important today as they were in 1987. Employers hire I-O psychologists who understand the nuts and bolts of job analysis, legal and ethical issues, employee selection, performance appraisal, and training and development. However, the biggest change was seen in leadership and management theories being rated first today, compared to ninth in 1987. There are growing opportunities for psychologists to make money selecting, developing, and coaching leaders. One way an I-O psychologist might distinguish himself or herself in the leadership arena is to develop skills working with groups, not just individuals. This seems to be an area that may be undervalued by practicing I-O psychologists. There are often classes available in the mental health fields for interested students. Another skill that might benefit I-O psychologists working with leaders is individual psychological assessment, as recommended by Silzer and Jeanneret (2011).

Getting back to traditional industrial psychology, we have always wondered why compensation has been neglected by I-O psychologists. Not only is it a traditional function of human resources management, but it plays a critical role in motivating employees. In our study, the I-O psychologists working in industry noted its importance, but the I-O psychologists working in education, consulting, or government found its value less important. Acquiring expertise in compensation might be another way for an I-O psychologist to distinguish himself or herself,

and a focus on executive compensation might tie in nicely to improving the quality of leadership in organizations.

In the area of research, we feel that master's students might benefit from classes on psychometrics or survey research methods.
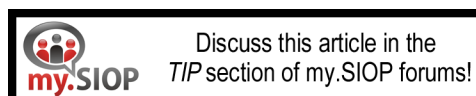
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Discuss this article in the *TIP* section of my.SIOP forums!

Happy 40th Birthday Competencies

Thomas Stetz
Hawaii Pacific University

It's 11:59 PM December 31, 1972. **Robert Guion** is president of SIOP. Gas costs 40¢ a gallon. And a six-year-old boy raises his plastic champagne flute filled with sparkling apple juice in the air for the countdown. Dick Clark was in Times Square, but New Year's Rockin' Eve was hosted by Three Dog Night. Little did the boy know that something BIG would happen in the new year, something so big that it would still be affecting his professional career 40 years later. No, the big thing wasn't Elvis' Hawaii concert, nor was it Billie Jean King beating Bobby Riggs. It wasn't the official opening of the World Trade Center, nor was it the last U.S. soldier leaving Vietnam. In 1973, *American Psychologist* would publish David McClelland's article, "Testing for Competence Rather Than for 'Intelligence,'" giving birth to the competency movement.

To celebrate competencies turning 40 this year and hitting middle age, I thought it would be nice to collect a few birthday wishes and memories from some of our most knowledgeable and esteemed SIOP competency colleagues.

Juan Sanchez admits that at times competencies had him worried. He had this to say in his birthday wish: "Dear Competency Movement, I am so proud of you! I must confess I did worry a lot about you in your teens. . . you were so fuzzy and so unlike your perhaps a bit too square older brother Job Analysis. And look at you now, a fully grown up strategic partner, heck more, a strategic driver!"

While Juan was just happy to see the competency movement finally grown up, **Ed Levine** was thinking marriage. He had this to say, "Happy 40th competencies! Hopefully down the road there will be a successful marriage of competencies, which link well to organizational goals, and KSAOs from job analysis, which link well to measurable constructs for use in HR applications like talent management." If they haven't taken wedding vows yet, is there really any hope? It's like they've been dating forever.

Surprisingly, **Filip Lievens** hit on two of the themes above when he penned his birthday comment. "In the 40 years since McClelland's 1973 article, competencies have become one of the most striking examples of the science –practice gap. Competencies seem often a nightmare to researchers due to their fuzzy nature and conceptualization. Conversely, they appear to be a dream for practitioners who enjoy their efficiency and straightforward managerial appeal. Both parties will acknowledge, though, that the key legacy of the competency movement lies in having emphasized the link between strategic HR and business objectives and work descriptors."

Wayne Cascio had this to say about the competency movement. "I remember being very much influenced by McClelland's article when it appeared in 1973. Since that time the "competency"' movement has certainly developed extensively. While the unit of analysis of a competency analysis can vary from a single job to an entire organization, I concur with Schmieder and Frame (2007) that neither job analysis nor competency modeling is a singular approach to studying work, and there is much variability in the ways that each one is implemented in practice. While competency models clearly try to establish some direct line of sight between individual competency requirements and the broader goals of an organization, I believe that our field would benefit from more standardization or uniformity in approaches to competency modeling."

With the wit that I have come to expect from **Paul Muchinsky,** he shared this: "In trying to explain the relationship between creativity and intelligence, Quinn McNemar once said, 'I never met a creative moron.' I never met a competent person who was lacking in knowledge and skill."

So far it looks like a few themes have emerged: the somewhat nebulous conceptualization of a competency, a disconnect with the older more established job analysis techniques, and an acknowledgement that it is just one tool but does have its usefulness.

Perhaps the solution (or lack of solution) to the first two themes can be found in **Fred Morgeson's** competency birthday comment, "Given how long they have been around, it is surprising how little (rigorous) research has been done on them."

Regardless of the solution, **Jeff Schippmann** accurately observed that, "Whether you love the concept of competencies, hate the concept, or are unsure what they are, and question if they even rise to the status of viable concept, the fact is they have become so embedded in the language and practice of business they are here to stay."

So that is what some of our colleagues had to say about the competency movement. However, to learn more about McClelland's article I turned to my favorite source: Google. As I write this (May, 2013) Google Scholar shows that the

article had been cited 2,999 times. Interestingly, when I clicked on "Cited by" I found that Goleman's 1995 book on emotional intelligence (which was listed first) had 14,790 citations (which is about 14,790 times more than this article will probably be cited). I thought that this was interesting and will let the readers interpret this little factoid.

All of this was entertaining and maybe a little enlightening, but I still felt I needed more information for this birthday article. I decided to find someone who could give a lot of details about the competency movement and sought out the closest family member I could find: Job Analysis, or JA as he is sometimes called, and who Juan described earlier as competency's "square older brother." JA is a busy guy and hard to track down, but I finally got his cell number. I interrupted him in the middle of a public safety job analysis project, but after some pleading JA agreed to talk to me about his younger brother. He really didn't have a birthday wish. It was more of a rant (there appear to be some family issues). Here is what he had to say. "Look, don't get me wrong, I love my little brother *Compy*. But come on, look at the numbers. As a gag gift I printed up a graph and had it nicely framed and sent to Compy for his birthday. Look at it! I am much more popular than he ever was. No one even wrote about him until the 90s, and he's never closed any gap on me. Plus look at 2012, his numbers decreased. I think it could be a little bit of competency fatigue."

There was a lot more sibling rivalry than I expected between Compy and JA. JA continued, "Google's got this cool tool called Ngram Viewer that searches the yearly count of n-grams, or letter combinations, from over 5.2 million digitized books. This database has books published from 1500 to 2008. Granted the Renaissance was quite a time, but I doubt that Pope Julius II used a competency model when he selected Michelangelo to paint the ceiling of the Sistine Chapel. I used Compy's birth year, 1973, instead. I created this graph with the *y*-axis showing the percent of occurrences in each year for the n-grams 'competency model' and 'job analysis.' And look, it's the *same thing*. It also proves that I am super popular, but I get no respect. I think am going to have this one framed and put over my fireplace. I'll send you a picture." [Ed.: http://books.google.com/ngrams/] Sure enough a couple of weeks later I got an email with this picture attached.

JA was super fired-up by this time and kept on going. "Look, I'm all for future-oriented competencies, but do you really think we are going to need a police competency of *high-speed hover vehicle operation* because someone thinks we will all be driving George Jetson cars in a few years?" At that point I had had enough and politely excused myself from the call.

Now that I heard from some of our great minds (who replied to my email request) and of course from JA (Compy declined to comment for this article), I think it is quite clear that the competency movement has had an impact on all of us. However, there are still some lingering questions and issues.

My first most personal lingering question is this: Why the heck did my parents let a 6-year-old stay up so late?

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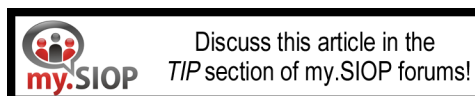
Social Values: Emergence of a Five-Factor Model

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Abstract: Research generally supports the notion that there are universal structures for both human values and personality. The purpose of this study was to expand this argument and inductively examine the factor structure of social values based on a novel approach of popular culture markers, examine overlap between these factors and known dimensions of social values, and examine how these factors covary with the 5-factor model of personality. Results support 5 factors that overlap with existing models of social values, while each of the factors displayed unique patterns of covariance with the 5-factor model of personality. Implications for teaching (practical illustration in survey development, assessment, exploratory factor analysis, and Q-sort methodology for students) and research (initial test of the feasibility to factor analyze additional indicators of norms, beliefs, values, and/or personality) are discussed.

Many researchers argue that there are universal structures for both human values and personality (e.g., Goldberg, 1981; McCrae & Costa, 1997; Schwartz, 1994; Schwartz & Bilsky, 1987). Indeed, it seems industrial-organizational (I-O) psychologists have embraced this belief with some of the most influential papers in recent years revolving around five-factor model (FFM) traits as predictors of core I-O criteria, such as job performance and career success (e.g., Barrick & Mount, 1991; Judge, Higgins, Thoresen, & Barrick, 2006). Consequently, academic I-O psychologists often discuss these issues (e.g., universal structures of values and personality) in a number of graduate and undergraduate courses with students. In a recent undergraduate Theories of Personality class discussion revolving around the universal structure of personality and exploratory factor analysis, a question was posed: "Professor, since researchers have factor analyzed adjectives and developed a universal personality structure known as the Big Five or five-factor model, does that mean we can factor analyze practically anything and come up with these same five factors? For example, could one factor analyze music lyrics and replicate this universal structure?" My response was, of course: "Interesting question! I'm assuming it would approximate the structure of social values versus the five-factor model, but we would need to formally develop hypotheses and/or research questions to properly answer your question. Class project?"

Research Question 1: Is there a coherent factor structure of social values within popular music?
Research Question 2: Will these factors reflect known dimensions of social values?
Research Question 3: How do these factors empirically covary with the five-factor model?

Method

Participants and Procedure

Participants were recruited using a peer-nomination web-based sampling methodology, similar to approaches used by Martins, Eddleston, and Veiga (2002), and Matthews, Kath, and Barnes-Farrell (2010). Information about the study was presented as a class project to 80 students enrolled in an advanced undergraduate personality psychology course at a large southeastern U.S. university. Students were instructed to recruit participants by forwarding the study information and survey link to friends and family members who might qualify (an email invitation was provided). Students received nominal course credit for their recruiting efforts while participants received no compensation. The final sample for the study consisted of 376 participants (independent of the student recruiters), with an average age of 26.74 (*SD* = 9.57). The sample was diverse with 60.4% being female, and was comprised of the following ethnicities: 53.0% Hispanic, 30.5% White, 9.2% African American, 2.6% Asian/Pacific Islander, and 4.6% other.

Measures

Social values. Each of the 100 songs from the "*Billboard Top 100 (2000 – 2010)*" list was written into a self-report statement. The *Billboard Top 100 (2000 – 2010)* was used to ensure comprehensiveness of the construct

domain. Item writing was conducted by groups of four to five students (total *N* = 80) enrolled in an advanced under-graduate personality psychology course with the assistance of the course instructor (author). The written lyrics for each song were used to determine the essence of the song and that message was transformed into a self-report statement. Items were carefully crafted following guidelines for item generation that incorporated easy reading level, short direct statements, and avoidance of words and phrases with multiple connotations (see Hinkin, 1998). Each statement was discussed by the group until absolute agreement was achieved for the accuracy of the developed item. Sample items include: "I feel I am worthy of admiration" (based on the song "Boom Boom Pow" by The Black Eyed Peas) and "I am cautious of the first impression that I give" (based on the song "In Da Club" by 50 Cent). Each of the 100 items was assessed on a 5-point scale ranging from 1 (very inaccurate) to 5 (very accurate).

Five factor model. The five-factor model of personality was assessed with the public domain International Personality Item Pool developed by Goldberg (2000). Sample items include: "I am the life of the party" (extraversion); "I feel others' emotions" (agreeableness); "I am always prepared" (conscientiousness); "I get stressed out easily" (neuroticism); and "I am full of ideas" (openness). Each personality factor consisted of 10 items on a 5-point scale ranging from 1 = *very inaccurate* to 5 = *very accurate*. The coefficient alpha reliabilities ranged from .77 to .87.

Results

To answer Research Question 1, principal axis factoring was conducted with oblimin rotation and Kaiser normalization. Examination of the eigenvalues, scree plot, factor loadings, and item variance suggested a five factor solution. There was some evidence of a sixth factor, however, strong cross-loadings and poor general factor structure rendered the five factor solution a better fit of the data. Items were examined post-hoc to determine interpretability and coherence within and between factors. The five factors were interpreted as: positive self-perceptions and perseverance; superficial beliefs and behaviors; love and companionship; sexuality and experimentation; and emotional distance and independence. These factors, sample items, and corresponding songs/artists are reported in Table 1. All items and principle axis loadings on the five factors above .32 (see Tabachnick & Fidell, 2001) are presented in the Appendix.

Table 1

Sample Items From the Social Values Five-Factor Model

Factor	Sample Items	Artist (Song)
Positive self-perceptions and perseverance	I know I am a worthy person.	Chris Brown (Kiss kiss)
	I work hard to get the things I deserve.	Eve (Let me blow ya mind)
	I put effort towards things I find worthwile.	Missy Elliott (Work it)
Superficial beliefs and behaviors	I am superficial.	Chingy (Right thurr)
	I prefer the material luxuries in life.	Kanye West (Gold digger)
	I like to be the center of attention.	Janet (All for you)
Love and companionship	I give my all in a relationship.	Jason Mraz (I'm yours)
	When I fall in love, I become focused on that person.	Faith Hill (Breathe)
	A relationship can make you feel complete.	Matchbox Twenty (Bent)
Sexuality and experimentation	I am open-minded when it comes to love-making.	Lil Wayne (Lollipop)
	I like to have sex in public places.	Usher (Love in this club)
	I'm an experimental person.	Katy Perry (I kissed a girl)
Emotional distance and independence	I prefer to keep myself at an emotional distance to avoid getting hurt.	Leona Lewis (Bleeding love)
	I distance myself from my emotions.	OutKast (Hey ya!)
	I like to keep people guessing.	Nelly Furtado (Promiscuous)

To answer Research Question 2, the resultant social values factors were compared to an existing model of social values, based on motivational types, through a classroom Q-sort project (Block, 1961). Specifically, the items from the resultant five factor structure were compared to construct definitions for each social value from Schwartz (1994) through a classroom Q-sort task (cf. Anderson & Gerbing, 1991; Hinkin, 1998). Essentially this process yielded the proportion of substantive agreement for each item in relation to the existing construct by n_c/N, where n_c represents the number of participants who assigned an item to the construct definition, and *N* is the total number of participants. Results for the two models showed clear overlap with many of the items within the resultant five factors displaying proportion of substantive agreement well above .80 to construct definitions from Schwartz (1994). For

example, the positive self-perceptions and perseverance factor displayed characteristic values associated with self-direction and tradition. Similarly, the superficial beliefs and behaviors factor showed characteristics of achievement values; love and companionship showed characteristics of security values; sexuality and experimentation showed characteristics of hedonism, stimulation, and conformity (reverse); and emotional distance and independence showed characteristics of power. However, the new five-factor model of social values based on popular culture, as operationalized in the present study, did not clearly reflect universalism and benevolence values.

To answer Research Question 3, regression based factor scores were created for the resultant five-factor model of social values and correlated with the five-factor model of personality (see Table 2). Overall, 18 of the 25 relationships between social values and personality were statistically significant ($p < .05$). Specifically, the positive self-perceptions and perseverance factor was positively related to all FFM variables, except for a negative relationship with Neuroticism. The superficial beliefs and behaviors factor was positively related to Extraversion and Neuroticism, and negatively related to Agreeableness and Conscientiousness. The love and companionship factor was positively related to Agreeableness, Conscientiousness, and Neuroticism. Meanwhile, as one would probably expect, the sexuality and experimentation factor was positively related to Extraversion and Openness. Finally, the distance and independence factor displayed negative relationships with Extraversion, Agreeableness, and Conscientiousness, as well as a positive relationship with Neuroticism.

Table 2

Correlations Between the Social Values Five-Factor Model and the Five-Factor Model of Personality

Variables	1	2	3	4	5	6	7	8	9	10
Social values five-factor model										
1. Positive self-perceptions and perseverance	-									
2. Superficial beliefs and behaviors	-.09	-								
3. Love and companionship	.15**	.06	-							
4. Sexuality and experimentation	.18**	.15*	-.01	-						
5. Emotional distance and independence	-.16**	.24***	.03	.06	-					
Five-factor model of personality										
6. Extraversion	.31***	.27***	.01	.36***	-.22***	*.86*				
7. Agreeableness	.35***	-.26***	.40***	-.09	-.28***	.15**	*.77*			
8. Contentiousness	.44***	-.18**	.15*	-.07	-.28***	.08	.26***	*.78*		
9. Neuroticism	-.31***	.36***	.27***	-.10	.40***	-.14**	-.14**	-.20***	*.87*	
10. Openness	.36***	.02	.09	.27***	.02	.21***	.18***	.25***	-.08	*.78*

Note. $N = 304$. Cronbach's alpha coefficients are in italics and appear on the diagonal.

*$p < .05$; ** $p < .01$; ***$p < .001$

Discussion

The purpose of this study was to determine if there was a coherent factor structure of social values with popular music lyrics, see if these factors reflect known dimensions of social values, and examine how these factors covary with the FFM. The general findings indicate the emergence of a five-factor model of social values. Findings indicate overlap with prior conceptions of motivational types of social values (e.g., Schwartz, 1994); however, results also suggest some motivational values such as universalism and benevolence are missing from the sample or simply did not converge into an interpretable factor. Post-hoc examination of the 100 self-report statements suggests that these prosocial motivational values do not represent meaningful themes within these songs as only one statement resembled these motives ("I feel responsible to help others"). Finally, the emergent five-factor model of social values displayed meaningful covariance with the FFM of personality. This is potentially meaningful as this suggests people with certain types of personality traits (e.g., high in Extraversion and Openness), in general, are more likely to hold certain types of social values (e.g., sexuality and experimentation).

Implications for Teaching and Practice

One of the larger contributions of the present work for I-O psychologists revolves around classroom integration of this methodology. Specifically, this project served as a practical illustration in survey development (e.g., item writing), assessment, exploratory factor analysis, and Q-sort methodology. This is important for academics as this

project was a mechanism to engage undergraduate students in the discussion and better understanding of theoretical and methodological approaches to universal theories of social values and personality beyond lectures, textbooks, and outside readings. This sort of hands-on illustration of the material is a much overlooked supplemental resource for classroom teachings in theories of personality, organizational psychology, research methods, and other courses commonly taught by I-O faculty. In addition, this work is important for practitioners as the skills taught with this type of exercise have clear value to students who end up in practice-focused careers. For example, self-report surveys are the most commonly used data collection method in field research and applied practice (Stone, 1978). A basic understanding of the methodological underpinnings of these surveys and procedures is vital for both entry level and experienced I-O practitioners. The exercise presented here helps illustrate these methods.

Implications for Research

Though this study was conducted as a teaching demonstration, there are some implications for research as well. For example, this study suggests that data driven inductive theory and scale development (e.g., upcoming *Journal of Business and Psychology* special issue on inductive research in organizations) can move beyond the lexical approach and suggests the feasibility to factor analyze additional indicators of norms, beliefs, values, and/or personality. Indeed, as proposed in the introduction of this paper, we can factor analyze practically anything assigned subjective meaning and assessed with an appropriate sample. Thus future research could expand the general idea proposed here and more fully factor analyze social values.

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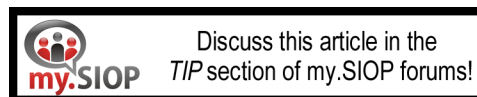
Application of Modern Technology and Social Media in the Workplace

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Tiffany Poeppelman
Aptima

With *TIP* transitioning to an online-only format, there couldn't be a better time to introduce a new column on technology and social media! As I-O psychologists, there's a need for us to understand how modern technology and social media influence practice and research, as they are increasingly prevalent in the workplace. Think about the last time you worked without some form of technology or social media. Virtually impossible, right? (Ok, pun intended.)

We can't ignore the fact that modern applications of technology are changing the way we do work daily. For example, in order to write this column, we leveraged technology by collaborating through online tools, which allowed us to share our computer screens, track our tasks, hold video meetings, send emails, and save our documents in a shared space using Dropbox. These are just a few of the ways that technology is changing the way work gets done.

Social media, which can be formally defined as "Internet communications platforms where more than one user can publish/post information within a community of users" (Carroll, Romano-Bergstrom, & Fischer, 2013) such as Twitter, LinkedIn, and Facebook, are also impacting the workplace. In fact, research shows that users spend 20% of their time on social media sites with 17% of that time spent on Facebook alone (Nielsen, 2012)! As most of us know, some of this time spent on social media sites is during work hours. It's not unheard-of for workers to be fired for posting messages about their workplace issues or frustrations (Clearinghouse, 2013). Don't worry, it isn't all bad news. Recent studies are beginning to test and understand the positive effects social media can have on the workplace, such as increasing trust among workers and increasing informal learning (e.g., Cao, Vogel, Guo, Liu, & Gu, 2012; Ravenscroft, Schmidt, Cook, & Bradley, 2013).

The way we as I-O psychologists interact with each other is also shifting due to new technologies and social media tools. One example of this is the new technological platform called my.SIOP, which facilitates collaborations and social connections between SIOP members. Because of this new online tool, members have connected at conferences and begun research collaborations after meeting virtually! Also, this year at SIOP, Dr. Theodore Hayes revolutionized the way that we as SIOP members can present at the conference using advanced technology by having his personal avatar introduce his session. In case you missed it, be sure to check out the introduction to his *Technology Enhanced Assessments Symposium* (Hayes, 2013).

These evolving tools also provide additional avenues to communicate with the general public and enhance the familiarity of our field. Our 2013 SIOP president, Tammy Allen, stated that this year's goal is to continue to increase the visibility of the I-O field as well as advance the overall impact the field is having on the workforce. What better way to meet these goals than to leverage social media to share knowledge and create awareness about our field of study! For example, I-O psychologists can post updates about their latest publications or share details about I-O related events. In fact, it's already happening. Check out the buzz from the Houston conference.

The ways that technology and social media are changing the workforce are innumerable and we are confident that we could have a never-ending list of topics to write about in this article. However, we were curious to learn what I-O Psychologists are most interested in to help us tailor our column. So we figured, what better way to find out then

to review all of the cutting-edge research presented at SIOP over the last couple of years! After scouring past conference sessions, we identified some key thematic topics. While this isn't by any means intended to be a comprehensive summary of all presentations in this realm, we wanted to provide you with a list of trends and hot topics in our field. Below you will find those key areas.

Increase in Virtual Workplaces

One of the largest areas of interest in 2012 and 2013 was *virtual workplaces*. This isn't a complete surprise as approximately 20% of workers worldwide reported telecommuting in 2012 and this trend is one that has been and will continue to grow over the years (Reaney, 2012). We can also speculate that this 20% underestimates how many true virtual employees are in the workplace as the statistic is limited to only those who are geographically dispersed. Researchers in this area suggest that when defining the term "virtual," we must account for recent changes in technology and define the construct in terms of the use and characteristics of the virtual tools being used in organizations (Grossenbacher, Brown, Quinn, & Prewett, 2013; Prasad, DeRosa, & Beyerlein, 2012). Specifically, it should be defined in terms of three dimensions (a) sychronicity (i.e., the naturalness of the communication exchange and degree of delay between responses via technologies), (b) technology reliance (i.e., whether technology is needed to get the work done), and (c) information value (i.e., whether information being communicated over technology is critical to the work being done) (Grossenbacher et al., 2013). Within this area, SIOP members are working towards understanding how virtual work impacts individual performance, teamwork, and leadership (e.g., Burke & Grossman, 2013; Vega, Anderson, & Kaplan, 2012). For example, research is being conducted to understand which individual- and team-level factors predict performance in a virtual environment (e.g., Geller, 2013; Pitts, Wright, & Harkabus, 2012).

Changes in Assessment & Selection Technology

Technology is rapidly changing the way I-O psychologists are designing and implementing assessments in the workplace. Paper-and-pencil tests are moving out and video-based situational judgment tests, simulations, and web-based assessments (even provided through mobile devices) are moving in (e.g., Golubovich & Ryan, 2013). Fetzer (2013) argues that simulations are becoming the norm rather than the exception. To demonstrate this, there was an IGNITE session in Houston with nine different organizations showcasing their state-of-the-art simulation technologies. In case you missed it, be sure to check out the highlights from a few of those presentations!

Holland Video   **Sydell Video**

Yang, Sireci, and Hayes (2013) caution that practitioners and researchers should be thinking about which situations are best for these new technologies because they're not all appropriate for every situation. In addition, they encourage practitioners and researchers to think about how the measurement of psychological constructs may differ, compared to traditional measures. Video technology is further transforming the way organizations recruit and select employees. For example, resumés are now being submitted in a video format (Hemstra, Oostrom, Derous, Serlie, & Born, 2013) and organizations are starting to conduct more interviews through video technologies as they realize their cost-saving (both time and money) potential (Miller & Alder, 2012).

Emergence of Social Media in the Workplace

Social media sites are no longer just a place to keep in touch with friends and family. They've entered the workspace and are influencing the way recruitment and hiring is implemented. Recruiters and headhunters can now find ideal candidates in minutes by searching key terms and leveraging sites such as LinkedIn, which hosts a repository of potential candidate pools (Zide, Ellman, & Shahini-Denning, 2013). However, there are concerns with this type of public applicant data. For instance, we are now finding that recruiters are making selection decisions based on information they gather from public profiles such as photographs, or the lack thereof (Salter & Poeppelman, 2013). Not only are social media sites changing our practice in the field, they are also impacting how researchers gather valuable workplace data (Robinson, Sinar, & Winter, 2013). For instance, if researchers want to collect turnover data, but do not have access to personnel files, they can pull specific information from LinkedIn profiles. By leveraging the name of the employee and organization of interest, researchers can view individual profiles and determine if an employee has left or stayed at that organization. Of course, using LinkedIn as a data source comes with a host of concerns and limitations (e.g., individuals not keeping their profiles up to date). We are confident that next year's conference will continue to highlight more research findings in this area.

Leveraging Mobile Devices

Research shows that between 2011 and 2012, the amount of time spent accessing the Internet from mobile devices increased by 22% and the usage of mobile applications increased by over 120% (Nielsen, 2012). Currently, I-O psychologists are trying to understand how we can leverage mobile devices for assessment and data collection (e.g., Hedricks, 2013) in addition to how these methods are changing the way we measure constructs (Morelli et al., 2013). Luckily, preliminary research is demonstrating measurement equivalence with noncognitive assessments, supporting the usage of these devices in practice and research (Morelli et al., 2013). However, Morelli (2013) cautions that there is no shortage of challenges and considerations that I-O psychologists should be aware of when using mobile assessments. For example, there may be demographic differences in those who use or do not use mobile devices, and technological issues may impede the proper delivery of assessments.

Sharing Technological Lessons Learned

It is clear that expertise surrounding technology and social media continues to grow in our field. Therefore, it should be of no surprise that we are also learning practical and logistical lessons along the way (e.g., Stehura, Klein, Otsberg, Killian, & Zimmer, 2013). There have been several SIOP presentations discussing the importance of information technology (IT) (Such et al., 2012) and why we need to continue to build our understanding of their "language" because we are often their customers (Locklear, 2012; Stehura, Dawson, Glass, Licht, & Ostberg, 2012). Stehura et al. (2013) described several challenges I-O psychologists encounter when delivering technology-laden products and how we can navigate them in the future. For example, I-O psychologists need to help organizations understand (a) how to handle user reactions to new technologies because employees may lack the capabilities to appropriately leverage them; (b) that new technologies may not get used after being implemented, therefore proper education needs to be delivered; and (c) that technologies may become quickly outdated, making adaptable technologies important (Illingworth, 2013; Stehura et al., 2013).

So, as you can see, the importance of technological advances and social media are indisputable; they are evolving our own SIOP experience as well as vastly and continuously changing our workplace. These facts alone make it even more important to generate awareness around common day-to-day practices so we can understand how they impact our personal interactions, employer expectations, hiring practices, training experiences, marketing techniques, and much more. It is for this reason we have embarked on a long and exciting journey as *TIP* columnists for **The Modern App**.

The Modern App: Future Columns

So what should you expect? Within *The Modern App* column, we will not only highlight current technologies and social media research, but we also intend to cover current practices within industry. We recognize that you as researchers, professionals, and students do not have time to read all of the current literature. We get it. So our goal will be to summarize the research and current practices and bring it to you. Our goal of highlighting research is to help educate and bring awareness to those technologies or social media best practices. However, we know that research in itself is not enough. The question we want to help you answer is: *What kind of research should I-O psychologists be conducting that can help practitioners use technology more efficiently, and how can those practices inform research?* In essence, we hope to provide a bridge between practice and research. What a thought!

In this column, we will also introduce experts from the field that can highlight how we as I-O psychologists are having an impact and leverage multidisciplinary means to advance our area of practice. Some of the areas of interest we might target include communication and marketing of social media benefits, adaptive training technologies, big data research and technologies, and others. We want to keep you up to date and make this a key resource for you every quarter so you continue to leverage it for your workplace and research needs. Who wouldn't want their readers coming back every issue?

The Modern App, at its core, is a way for us to communicate the best and the worst of technologies and social media that are currently changing the way people think about and conduct business.

In the coming issues, you can expect to see this column focus on hot topics and trends highlighted above along with some key issues mentioned by our SIOP leaders. But keep in mind that we are open to hearing your ideas! If you or others you know are doing work in this area and have research or current practices you want to share with us, feel free to email us directly (modernapp.tip@gmail.com). We'd love to hear from you! Who knows, we might ever feature your current work in our next issue!

Also, be sure to follow us on Twitter @themodernapp! We'd love to hear what you think and topics you'd like future columns to focus on!

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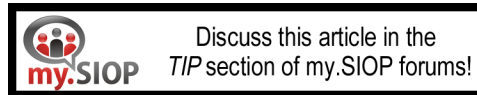
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I-O Psychology Assisting Humanitarian Aid:
An Interview With Governor Scott McCallum

Lori Foster Thompson
North Carolina State University

Ishbel McWha
Cornell University

Alexander E. Gloss
North Carolina State University

Greetings *TIP* readers, and welcome to our first issue of the **Spotlight on HWP** column! In this column, we plan to focus on people and issues pertaining to a very specific type of work, namely deliberate and organized efforts to enhance human welfare. This is the form of work around which the emerging subdiscipline of humanitarian work psychology is centered. As you might imagine, organized work intentionally designed to improve a person or people's standard of living includes many types of activities, everything from disaster relief to corporate social responsibility programs to the training of entrepreneurs in lower-income settings. Either directly or indirectly, countless jobs are in some way related to enhancing human welfare. We seek to highlight this fact and to better understand the unique dynamics of work that is specifically designed to help others.

This is the first issue of this new column, but it is also a synthesis of two retiring columns: the **Spotlight on Global I-O Psychology** column that was edited by Lori Foster Thompson, Alex Gloss, and **M. K. Ward,** and the **Pro-Social I-O: Quo Vadis** column that was edited by our colleague Professor **Stuart Carr.** For many years, while advancing his work as a researcher and scientist, Professor Carr has been advocating and working for three things: the greater awareness of prosocial issues in I-O psychology, a heightened internationalization of the discipline, and an enhanced focus on humanitarian work. Indeed, Professor Carr can in many ways be considered the father of the subdiscipline of humanitarian work psychology from which this column gets its name.

In his **Quo Vadis** column, Professor Carr brought on guest authors who were able to speak to prosocial, humanitarian, and international issues in I-O psychology. We carry on his tradition by devoting each issue to an interview with individuals involved in at least two of these three areas. Before moving forward with this first issue's interview of our esteemed guest author, it is important to acknowledge that we, and indeed I-O psychology, owe a deep debt of gratitude to Professor Carr for his tireless advancement of our discipline and for his passion in helping to bring that discipline to bear on some of the world's most pressing issues.

An Interview With Governor Scott McCallum

In this first column, we are joined, auspiciously, by Governor Scott McCallum, former governor of Wisconsin and now president and CEO of the Aidmatrix Foundation, the world's leading nonprofit dealing with information technology and the use of that technology to assist humanitarian efforts. Some of you heard or met Governor McCallum at SIOP 2013 in Houston. The governor was invited to speak at the Friday Seminar entitled "Humanitarian Work Psychology: Supply Meets Demand" alongside Telma Viale, special representative to the United Nations and director of the New York International Labour Organization office. The governor has received high accolades for his innovative approaches to helping over 52,000 organizations on six continents, organizations that are themselves tackling some of the world's most pressing problems. He received a 21st Century Achievement Award for his "visionary use of information technology to promote positive social economic and educational change" and was designated a "true hero of the information age" by

Governor Scott McCallum

For more information on his work at Aidmatrix visit www.aidmatrix.org or watch this video.

Computerworld. Earlier this year, *Government Technology Magazine* named him one of the "Top 25 Doers, Dreamers, and Drivers" in US Technology.

In this issue, we explore what Gov. McCallum and Aidmatrix do, why it is that he was invited to SIOP this year, and how he thinks I-O psychology can interface with humanitarian organizations.

Can you tell us more about what you and the Aidmatrix Foundation do?

Aidmatrix and I believe that by leveraging information technology, we can triumph over the world's most challenging humanitarian crises. Our world-class supply chain management technologies make it easy and efficient for everyone from donors to nonprofits to governments to get the right aid to people when and where they need it most.

Our team of passionate people is dedicated to, and successful in, creating and delivering tools and processes that bring people together to help others. $1.5 billion in value of products moves through Aidmatrix technology each year. This includes almost all U.S. charitable food, most UK charitable food, and donated food in Asia, Africa, and Latin America. Aidmatrix solutions are used for other products as well, including medicines and clothing. Our users include organizations like Catholic Relief Services, Save the Children, CARE, and Children International. These organizations, and many others, build their entire supply chain on Aidmatrix solutions: from procurement and transportation, to warehousing and distribution. These solutions change the manner in which work is done in the humanitarian sector. In most cases, the changes required are more than just technology inputs, they shape the very work setting within the organization. This includes, and requires, adjustments to training, education, and in many cases a shift in culture within the organization.

What brought you to SIOP this year?

I came to SIOP to learn more about I-O psychology and to make the case that there is a need for a greater understanding of how to assist and develop human capital within the humanitarian sector. If we are to shift the paradigm of traditional giving and training programs away from charity and toward impacting the core of a person's ability to move out of poverty, and even beyond that to reach their greatest potential, we need to utilize I-O psychology's abilities to measure people and match them to skills, training, education, and occupations. Looking at it in another way, the Aidmatrix supply chain has been so beneficial because of its ability to match needs and demands with supply; while this matching is presently used for product and services, with the help of I-O psychology, we believe it can be applied directly to the "supply chain" of human capital in disaster situations, humanitarian crises, and even more universally in a variety of settings, including lower-income settings.

For example, we have been approached by several companies—including from regions where poverty and unemployment are especially high—that need us to help them match potential employees with job vacancies. From a single company's perspective, this means greater productivity, but from the standpoint of the region in which those companies are located, this means greater economic and workforce development. We can break free from the constraints of traditional training or job-matching work by utilizing insights from I-O psychology. This should be able to dramatically increase the likelihood of success in helping individuals to find jobs, in boosting organizational productivity, and I believe ultimately in driving economic, workforce, and human development around the world.

What role do you see for I-O psychology in the support of humanitarian organizations?

Any work done to help those that are jobless, below the poverty line, stuck at a certain rung of the economic ladder, or unable to find a job they are better suited for is an important humanitarian endeavor. I-O psychology is important in that it can help provide solid measurements of individuals and occupations. In the nonprofit sector, this includes not only paid employees but the countless volunteers utilized by many organizations throughout the world. I-O psychology can also help to allow nonprofit and humanitarian organizations to change their ways and to become more effective as inefficiency disruptors like information technology and new management techniques are introduced into the field.

Do you have any advice for I-O psychologists looking to work with humanitarian organizations?

The humanitarian sector, and specifically the nonprofit sector, is being forced to use better skills and metrics in their operations. This means that successful tools and management techniques used in the private sector will in-

creasingly be applied to the nonprofit sector. As with most other occupations, prospective I-O psychologists should be prepared to demonstrate how they would bring value to an organization. This can for example be through cost cutting by developing better recruitment tools or by measuring the impact of work in the field. The myriad number of examples of how I-O psychologists have helped organizations in the private sector can serve as a useful demonstration for how I-O can assist humanitarian and nonprofit organizations to be more efficient in accomplishing their mission of helping others.

Conclusion

    Thank you to Governor McCallum for this interesting and compelling perspective on I-O psychology's relationship with the nonprofit and humanitarian world. Governor McCallum's comments underscore the relevance of our discipline to assisting humanitarian aims and broader economic development efforts. We are very grateful to the governor for the time he took to respond to our questions, and we sincerely hope to see him at future SIOP conferences!
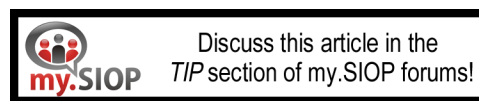
Organizational Neuroscience: A New *TIP* Column

M. K. Ward
North Carolina State University

Bill Becker
Texas Christian University

Relatively recently there has been a growing trend involving the addition of a "neuro" prefix to academic disciplines. Some examples of the neuro-movement include neuroeconomics, neuroleadership, and social neuroscience. In many high impact journals such as *Psychological Science*, the percentage of articles that involve neuroscience is higher than ever, and the rate of publication is increasing. Searching PubMed and EBSCOhost databases for the keywords "social neuroscience" returned seven articles published in 2002 compared with 276 articles in 2012. Today, neuroscience's influence extends to popular media as seen in topics like [brain training in the *New York Times*](#). In short, the reach of neuroscience is expanding rapidly in academic and public consciousness.

We believe that I-O is one of the few areas of psychology that has yet to embrace and explore the potential benefits of incorporating neuroscience into our research. We were, therefore, very pleased when *TIP*'s new editor, **Morrie Mullins**, was so receptive to a new column about organizational neuroscience (ON) and interdisciplinary research. We think this is an important emerging area of scientific inquiry that has the potential to push I-O research in exciting new directions.

Like many things in psychology, ON has been defined a variety of ways. Beugre (2010) described ON as neuro-organizational behavior or "the study of the impact of brain structures on human behavior in organizations" (p.289). Senior and Butler (2007) termed organizational cognitive neuroscience as "the study of the processes within the brain that underlie or influence human decisions, behaviors, and interactions either (a) within organizations or (b) in response to organizational manifestations or institutions" (p. 22). For the purposes of this column, we define ON as "a deliberate and judicious approach to spanning the divide between neuroscience and organizational science" (Becker & Cropanzano, 2010, p. 1055). Here we advocate a "big tent" approach to ON that embraces a variety of methods that seek to go inside our attitudes and behaviors. As such, we include areas such as genetics, biophysiology, and experimental philosophy to name just a few. Initial research in ON has included studies of leadership, job satisfaction, and implicit affect in organizations (Barsade, Ramarajah, & Westen, 2009; Lee, Senior, & Butler, 2012; Li, Song, & Arvey, 2012). Neuroscience is not about what parts of the brain "light up" when we get our performance review; rather, it is about understanding how a complex mix of conscious and nonconscious brain processes determine our attitudes and behaviors.

The collective "we" of I-O psychologists should familiarize ourselves with research in ON. We see three major benefits from this type of research. First, tools for data collection in ON provide an additional level of measurement. More specifically, neuroimaging techniques and physiological measures can assess processes within individual employees that they are unable to consciously report. In this way, ON offers a new within-person level of measurement. This relates to a second benefit, specifically that much of the I-O research literature relies on self-report data from surveys that are commonly influenced by self-serving biases and the vagaries of our memory system (Schwarz, 1999). Measurement tools from ON offer alternatives to self-report data. In combination, these additional methods of collecting data can complement traditional methods and create a powerful defense against monomethod bias with which we are all too familiar. It's plausible that neuro measures can be helpful in the last steps of a multihurdle selection system, when precision is key and where restriction of range is inherent to the situation. Third, research in ON has the potential to refine theory and refocus I-O on important questions. For example, leadership theories in I-O classify different types of leaders; techniques of ON can measure fine distinctions to support or refute differences between transformational and nontransformational leaders (Balthazard, Waldman, Thatcher, & Hannah, 2012).

Aside from potential gains from ON, there are also potential losses that I-O will incur if we fail to pursue this line of research. Some people have urged that we should avoid ON because of ethical or methodological concerns. We do not dismiss these concerns but instead argue that the best way to be involved in these debates is to be involved in the research. If we don't pursue ON, then we risk stagnation and becoming marginalized by other areas of psychology, such as social neuroscience, that are gaining influence. As psychologists we are committed to doing good, as evident in our principle of beneficence. In our opinion, that includes a responsibility to explore all opportunities to improve our field as a whole. In order to do good science, it is our belief that we must conduct the best research we can, and that means incorporating neuroscience to the extent that it improve our studies.

Assuming we've completely convinced you of the benefits of ON and its potential benefits for I-O research and practice, what's next? There are three simple steps: First we learn about issues, then we conduct research, and finally we put what we learn into practice and start over again. Step 1: we need to learn about ON. This column will feature researchers conducting studies in related areas of neuroscience as well as ON. We'll see that conducting studies in ON means doing interdisciplinary research. "Interdisciplinary research (IDR) is a mode of research by teams of individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories across two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice" (National Academies, 2005, p. 188). As mentioned previously, there are areas in psychology that have successfully merged into interdisciplinary domains, for example social neuroscience and evolutionary psychology.

Like other areas of psychology, I-O has rightfully touted the benefits of interdisciplinary research. Now, with this column, we will strive to spark ideas and encourage interdisciplinary studies. In short, we push to move from talking the talk to walking the walk. To this end, our desire is to help each other rise to the challenges and opportunities inherent in interdisciplinary studies.

Communication, measurement, and synthesis are three major challenges of interdisciplinary research. First, members of the research team need to clarify the expression of their thoughts to a more basic level because other team members often come from different training backgrounds. Measurement becomes challenging when members of an interdisciplinary research team inevitably have varying preferred methods of measurement. The third major challenge of interdisciplinary research lies in synthesizing theory and findings from more than one body of literature. I-O can contribute to overcoming these challenges. As a field, I-O has theories, empirical data, and practical research questions that are ripe for interdisciplinary inquiry.

Step 2 for I-O psychologists will be to build the subdiscipline of ON by conducting studies. Research about organizational teams and diverse perspectives has been a hot topic in I-O. Doing research in ON is an opportunity for us to practice what we preach by working in interdisciplinary teams that can provide that same diversity of thinking. By incorporating a biological perspective, Klein and D'Esposito (2007) found incongruence between strategic analysis protocols that many organizations use (e.g., SWOT analysis) and the cognitive functioning those protocols require. In the process of reconciling this discrepancy, further ON research can develop a unifying theory for strategic thinking in organizations. From the perspective of neuroscience, Yeats and Yeats (2007) found that activating specific neural networks in the brain during an organizational intervention mediated affective states and social behaviors. Understanding how organizational interventions change neural activity can lead to more efficient intervention designs (Yeats & Yeats, 2007).

In Step 3, many may be surprised to learn that despite its complexity and mind boggling future, ON has many applications that could be put into practice right now. What's more, these applications do not involve mind reading or reprogramming people's brains. For example, in a forthcoming paper we explore the evidence on intelligence that suggests that simple memory and reasoning tests are likely to be equivalent to, and potentially less biased predictors of, job performance than traditional IQ tests. In a similar vein, we will introduce readers to the practice of neurofeedback where practitioners are using qEEG to help individuals recognize counterproductive work behaviors and change their response mechanisms. The bottom line is that, although ON may appear more like something out of science fiction, in reality many of the practical implications involve relatively traditional, low tech changes. In sum, we can conduct valuable interdisciplinary research through ON that advance both the science and practice of I-O psychology.

Our goal is for this column is to challenge and support *TIP* readers in learning about and conducting research in

ON. The primary purpose of this column is to provide multiple views of the overall state and potential future of ON. Going forward we will feature individuals who are doing research related to ON. These features will aim to uncover lessons and overcome the challenges, real and imagined, facing interdisciplinarity and ON. Our hope is that this column will provide a forum to share information and inspire studies so we can put the *organization* in organizational neuroscience.

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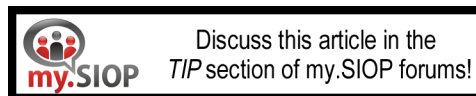
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Developing Career Paths for I-O Psychologists

Michael Trusty
Rolls Royce

In this installment of the **Practitioners' Forum**, we highlight a major initiative underway in SIOP: the study of careers for individuals with advanced degrees in industrial-organizational psychology.

How do the careers of I-O psychologists develop? While previous authors have looked at what I-O psychologists do (Blakeney, et al., 2002; Borman & Cox, 1996), less work has been done to help understand how I-O psychologists' careers develop over time. Documenting an I-O psychologist's career path (or career paths) could be useful on a number of fronts.

The Professional Practice Committee (PPC) is leading a project to develop a career path or set of career paths for I-O psychologists. A project team including members of the PPC and University of Akron's Center for Organizational Research are currently working on this with support from several other SIOP committees, including Scientific Affairs and Education and Training. Data are being collected regarding work activities of people with advanced degrees in I-O psychology, with the goal of documenting the career paths and experiences that contribute to success in both applied and academic settings. This initiative is currently underway, and in this article we describe the project and report on some preliminary findings.

This careers study has a number of ties to the current SIOP goals. Understanding the various roles and activities that people with an I-O education engage in will help ensure SIOP is seen as the authority on work-related psychology. It will also provide important information to champion the value of applied psychology in work settings. It could also provide a baseline for career support tools for students and members. Other professional organizations provide similar information. For example, the HR Careers website for the Chartered Institute of Personnel and Development in the United Kingdom (http://www.cipd.co.uk/hr-careers) provides an excellent example of the type of resources and support that could come from an effort such as this. In the U.S., the Society for Human Resource Management (SHRM) recently conducted a large-scale competency project by collecting data on members' perceptions of importance of, and experience in, various competencies. They were also asked to identify competencies that were needed at various levels of experience (early, advanced, and/or senior level) in the profession. SHRM will use this information for several purposes, including providing better development, education, and training to its members.

How Will SIOP Members Benefit?

We anticipate that the careers study will benefit all SIOP members, Student Affiliates, and potential members. The creation of I-O career paths could support the following:

1. Provide a standard template/protocol/base of information for SIOP mentors when working with mentees.
2. Provide a standard and informed framework from which people with advanced degrees in I-O psychology can consider how to manage their individual careers.
3. Advise efforts for lobbying for licensure and/or certification criteria.
4. Link with the I-O Salary Survey process to provide additional benchmarks and inform the way future salary surveys are structured.
5. Provide valuable input to academic program leaders responsible for undergraduate and graduate curriculum choices to maximize development of future recipients of advanced degrees in I-O psychology.
6. Create a body of knowledge with direct implications for the *Guidelines for Education and Training at the Doctoral/Master's Level in Industrial-Organizational Psychology.*

What Do We Hope to Accomplish?

This study has three main objectives.

1. Document the breadth of work currently engaged in by people with advanced degrees in I-O psychology
This goal builds on the findings of earlier studies of what I-O psychologists do (Blakeney et al., 2002, and Borman & Cox, 1996). This study includes practitioners working in organizations, practitioners working in consulting firms, and teachers and researchers working in academic settings, giving us further insight into what I-O psychologists do in a variety of work settings.

2. Identify the experiences and competencies related to success in the field of I-O Psychology
The intent of the second objective is to understand the underlying experiences and competencies that enable people with advanced degrees in I-O psychology to be successful. This objective will also allow some classification of experiences and competencies. Specifically, as the outcomes and activities of those working in applied and academic settings are likely to diverge, it is expected that some of the experiences and competencies required to work in these settings will differ.

3. Outline a career progression and development model for people with advanced degrees in I-O psychology
The final objective is more prescriptive in nature. We hope to develop prototype career paths from the data that can have multiple uses (e.g., inform graduate training, mentor–mentee interactions, career modelling by current members, and SIOP member development efforts). A very simple model is shown in Figure 1.
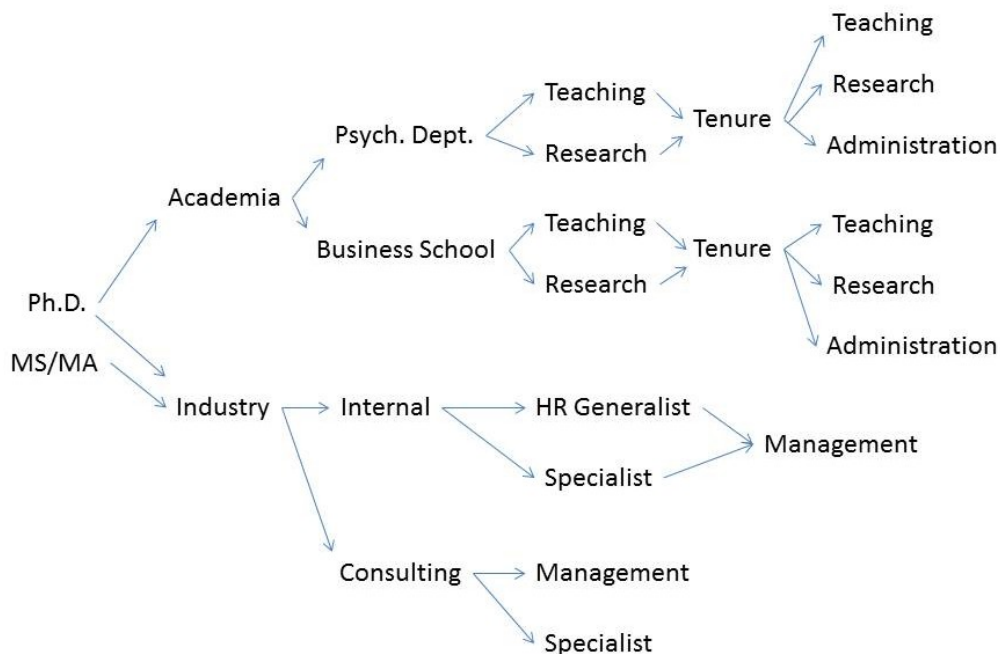
Figure 1: **Possible Career Paths for Person With Advanced Degree in I-O Psychology**

Based on data collected to date we anticipate multiple career paths. At minimum we expect different career paths for I-O Psychologists working in Academia, Consulting, working in government organizations, and finally those who are working in HR functions inside companies.

How Is the Professional Practice Committee Approaching This?

Step 1: Review of Current Models and Materials

The first step in this study involved collecting and reviewing current career models and source materials to ensure the approach is representative of contemporary thinking and research. Using SIOP membership data, we identified organizations that employed more than 3 I-O psychologists and contacted those organizations, asking them if they would be able to share any information such as job descriptions, competency models, or existing career paths specifically for people with advanced degrees in I-O psychology. We received information from 8 consulting firms and 5 government organizations. Although we did receive responses from I-O psychologists working in HR functions inside companies, there was little documented information available.

This information was used to develop preliminary career paths as well as structured interview guides for use in the second phase of the study. Table 1 summarizes the levels and possible job titles associated with each career level.

Table 1
Levels and Possible Job Titles

General level	Private sector - Industry - HR	Consulting organizations	Public sector - Government	Academic university
	Possible sample titles or roles	Possible sample titles or roles	Possible sample titles or roles	Possible sample titles or roles
Entry level individual contributor	Assistant HR manager	Project assistant Associate consultant Professional (Consultant)	Analyst Associate Entry level	Assistant professor
Individual contributor	HR manager (Nonsupervisory or supervisor ofclerical only) HR Research Specialist	Consulting associate Consultant Lead professional (Consultant)	Consultant Associate Full performance	Associate professor
Expert individual contributor		Senior consultant Senior professional	Expert	Full professor
Manager (or Supervisor) of individual contributors	Director of HR Center for Expertise Sr. director of HR Center for Director of HR Operations Sr. director of HR Operations	Manager Team leader Program manager Director	Case team leader Managerial Senior associate consultant Project leader	Department chair
Manager of managers	Area director of HR	Senior team leader Principal consultant Program director	Senior manager Principal	Dean
Executive	VP of HR - Center of Excellence VP of HR - Operations Regional vice president of HR Operations Senior vice president HR Chief HR officer Global HR officer	Director Officer Executive consultant V.P. Senior V.P.	Executive Senior executive Partner V.P. Director	V.P. Provost President

Step 2: Subject Matter Expert Interviews

The University of Akron's Center for Organizational Research is completing 1-1 interviews with 50 SIOP members selected to represent academic, consulting, government, and corporate HR careers. This step begins the process of capturing appropriate and relevant career experiences. The results of these interviews are being used to design a careers survey for the full SIOP membership. Over 30 interviews have been completed as of mid-May, enabling the team to develop some preliminary career paths for academic, consulting, and government careers. However, we still need to complete interviews with people in corporate HR roles. If you are contacted by the team from the Center for Organizational Research, please take the time to participate in an interview.

Step 3: Design and Administer a Careers Survey

A careers survey will be administered to the SIOP membership during the summer of 2013. Participation in this survey is critical to the study, so please complete the survey when you receive it! Data from all three steps will be combined to create the final career paths, including key competencies and experiences that I-O psychologists working in different settings need in order to be successful.

Findings from the careers study will be disseminated in a variety of formats including technical reports, a future *TIP* column, mentoring and careers sessions at the conference, and through my.SIOP and the SIOP website.

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Professional Practice Committee Updates

Tracy Kantrowitz
SHL

The careers study is a major focus for the Professional Practice Committee, along with several other important and impactful projects designed to facilitate member development and advocate for the practice of I-O psychology with outside organizations. The annual conference was the stage for a variety of committee-related activities, including mentoring programs, conference sessions presented as part of the executive block program that focus on the "business" of SIOP, task force meetings, and interviews conducted as part of the careers study. I'll highlight a couple of conference-related activities here.

Mentoring activities for professional members have expanded in exciting new directions. For the 4th consecutive year, the Professional Practice Committee sponsored a speed mentoring session during the conference. More than 50 practitioners participated in two 25-minute roundtable topic-driven discussions guided by 19 seasoned mentors on topics including: making career transitions, I-O psychology around the world, employee selection and assessment, I-O research-practice partnership, how to influence

stakeholders as an I-O practitioner, in-house consulting vs. external consulting, using data to drive organizational strategy, when best practice and practicality conflict, bringing I-O to the mainstream, and how things "really" work within organizations. This event was a great opportunity for practitioners to seek guidance from experienced mentors who have "been there and done that." Participants commented that they liked the relaxed nature and small groups, the caliber of the mentors, the ability to participate in an open and honest dialogue, meeting people with different perspectives and experiences on professional issues, and networking and meeting others in the field.

In addition to the speed mentoring program, the latest iteration of virtual group mentoring was launched in January with more than 80 protégés and 14 mentors from countries all over the world, including Namibia, Australia, Canada, India, and every time zone in the US. Such diversity in location has presented scheduling challenges, but the level of enthusiasm and flexibility on the part of participants is extremely high! This round of group mentoring builds upon previous group mentoring programs and includes more structure and tools (e.g., a blog for mentors to share tips and lessons learned calls facilitated by the Practice Committee).

Mentors and protégés from the speed and group mentoring programs enjoyed a meet and greet at the conference to meet in person and connect faces with names. Special thanks to **Samantha Ritchie, Maya Yankelevich, Karina Hui-Walowitz**, and **Mark Poteet** for leading and expanding the mentoring programs focused on practitioner development.

As reported by **Eric Dunleavy** and **Rich Tonowski** in the April 2013 TIP (see http://www.siop.org/tip/ Apr13/22_Kantrowicz.aspx), the Professional Practice Committee is spearheading an initiative to facilitate dialogue on findings and practices from our field that are of mutual interest to SIOP and EEOC. This dialogue has been operationalized as the Task Force on Contemporary Selection Practice Recommendations to EEOC. The Professional Practice Committee took advantage of the conference to progress the task force. An in-person meeting was held with task force members, SIOP executives and committee chairs, and members of the EEOC who attended either in-person or by phone. The main objective was to review findings and recommendations made by the task force related to the measurement of adverse impact and present this information to the EEOC for their comment. Once agreement is reached regarding direction for a series of papers on this topic, the next topic to be broached is validity transportability.

Special thanks to outgoing members of the Professional Practice Committee who have contributed in important ways during their three year terms: **Alexander Alonso, Dennis Doverspike, Anu Ramesh, Samantha Ritchie, Michael Trusty,** and **John Weiner**. For more information on these and other projects, please feel free to contact me at tracy.kantrowitz@shl.com.

Discuss this article in the *TIP* section of my.SIOP forums!
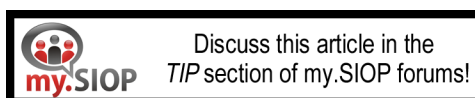
Announcing the SIOP Wikipedia Initiative

Satoris S. Culbertson
Kansas State University

I have a love–hate relationship with Wikipedia. On the one hand, I love being able to instantly find information on the most obscure things with the touch of a button. Indeed, it is through Wikipedia that I am able to quickly ascertain Mark Harmon's age while watching NCIS, figure out amid a conversation with a friend which season of Dexter featured the "Trinity Killer" (Season 4), and lovingly diagnose my grandmother as clearly exhibiting signs of witzelsucht while she's regaling stories from across the room. Oh, Grandma...

On the other hand, as an academic, Wikipedia can be a thorn in my side. Students consistently turn to information on Wikipedia for information for their class papers, treating the information therein as verified fact. The only real truth regarding Wikipedia, however, is that any given entry can contain mistakes or even intentional misinformation. In fact, Wikipedia's policy on this issue states: "While the overall trend is toward improvement, it is important to use Wikipedia carefully if it is intended to be used as a research source, since individual articles will, by their nature, vary in quality and maturity." This is evidenced by the realization that prior revisions of Wikipedia pages on Plato and Janis Joplin indicated that the former "is widely believed to have been a student of Barney the Purple Dinosaur and to have been deeply influenced by his dog, Cutie" whereas the latter "speedwalked everywhere and was afraid of toilets." (See http://www.huffingtonpost.com/2010/04/06/the-funniest-actsofwiki_n_522077.html#s224977title=Blood_Libel_Entr for more humorous examples of Wikipedia misinformation.)

It is with this love–hate relationship in mind that I wanted to shine a spotlight on a worthy initiative that Dr. **Therese Macan**, professor and director of the Doctoral Program in Industrial and Organizational Psychology at the University of Missouri-St. Louis, is putting forth: The SIOP Wikipedia Initiative. Dr. Macan hosted a roundtable discussion at this past conference in Houston to highlight ways to enhance student learning and service through Wikipedia. Rather than view Wikipedia as the enemy of academics, she acknowledges and appreciates the impact that Wikipedia can and does have in terms of knowledge dissemination. She notes, "When conducting a Google search on a topic, a Wikipedia entry typically appears as one of the first three web results, increasing the likelihood that individuals access information from this site. In this way, Wikipedia may often be the first research tool used by the public as an initial source of information." With this said, it's not surprising that estimates as of February 2012 indicate that the site attracts approximately 476 million unique visitors each month (ComScore, 2012).

Along with this appreciation for its impact, however, Dr. Macan also acknowledges the potential for misinformation given its open, editable platform. Rather than banish Wikipedia and its content from use by her students, however, Dr. Macan did quite the opposite. She incorporated Wikipedia and the revision of content into one of her graduate courses as a way to actively engage students in making Wikipedia a more credible source for technical and professional information about I-O psychology while concurrently expanding the visibility of I-O psychology as a whole.

In terms of credibility, what better way for us as I-O psychologists to ensure that content related to I-O psychology is accurately portrayed than to engage in the editing of content ourselves? Who better than those within the field to provide definitions of constructs, overviews of topics, and summaries of the extant literature? Of course, it isn't just about improving the accuracy of information that is reflected on Wikipedia. Dr. Macan also argues that engaging in the editing of Wikipedia content can help increase the visibility of I-O psychology. Referencing SIOP's Strategic Plan put forth by the Executive Committee to be the visible and trusted authority on work-related psychology, Dr. Macan notes that actively participating in the writing and updating of Wikipedia content can serve as a viable yet untapped resource to help SIOP move towards our goal of greater visibility.

What I find really great about all of this is that Dr. Macan not only talks about the benefits of participating in the modification of Wikipedia content, but she has also already taken steps to actively engage students in the process. As part of a special topics course on employment interviews that she taught during Spring 2011, she included an

assignment specifically geared toward having students update the Wikipedia entry on job interviews. While prepping her course and trying to find a unique learning experience for her students, she was reminded of an initiative put forth by the Association for Psychological Science (APS) that called upon APS members and their students to write, edit, and update Wikipedia entries. She subsequently looked at the existing Wikipedia entry for job interviews and found the coverage to be relatively sparse. "It included some information about legal issues and stress interviews but cited no empirical evidence from the more than 100 years of employment interview research conducted by I-O psychologists. This is unfortunate given that we know much more about interviews that could be beneficial to the larger public. For example, we know that adding structure to the interview can increase prediction. We also know that asking each applicant the same job relevant questions is one means of incorporating structure into the interview. None of this information had been shared."

With that, Dr. Macan and her students decided to take action during the course of the semester and try to make a difference. During that semester, her graduate students enhanced the information on employment interviews on Wikipedia by adding more complete and accurate information with over 100 research study references. In addition, a notable side benefit emerged. The graduate students learned how to translate research findings from journal articles on employment interviews into a layperson's terms, skills that will undoubtedly benefit them in their future professional careers. A quick glance at the current Wikipedia entry for job interviews shows the impressive outcome of their efforts.

In terms of going forward, Dr. Macan urges other members of SIOP to actively participate in the updating of content on Wikipedia. She also suggests that members share best practices with one another to continue moving this initiative forward in the future, (e.g., through the SIOP Exchange). As part of the exchange of ideas, she notes that it would be useful to keep track of which topics were updated and which topics still need to be tackled as a means to coordinate future efforts. "As a result of our unified efforts, user-friendly summaries of main research findings in I-O topic areas would be more accessible to a larger degree than is presently available on Wikipedia. Furthermore, this information could be made available in real time as studies are published in the I-O literature."

With all this said, I encourage you all to take a peek at what the Wikipedia entries look like for some of your particular research areas. Are there areas that need improvement? Are there topics that could use refinement? If so, take a stab at it, or build in a Wikipedia assignment into your own course. Dr. Macan has graciously agreed to serve as a resource to anyone who wants to try this in their classes, stating that she is more than happy to share what she did and lessons learned. She can be reached at Therese.Macan@umsl.edu. Shoot her an email—you never know what topic somebody might want to look up during an episode of *Undercover Boss*!

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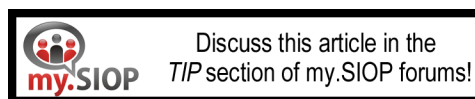
Alex Alonso
Society for Human Resource Management (SHRM)

Mo Wang
University of Florida
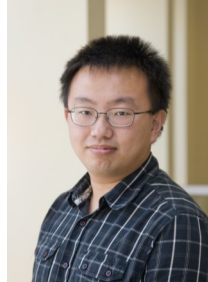
The effect of globalization has left an indelible mark on the practice of I-O psychology. Consider, for example, the rise of multinational corporations over the last 30 years as described by **Milt Hakel** and CJ de Wolff in our last column (Alonso & Wang, 2013). I-O psychology as a field has experienced an increasingly substantial need to apply our professional principles and practices to numerous populations and markets emerging across the globe. Building selection systems, designing executive education programs, and developing adaptive competency models across emerging markets have become the norms for I-O psychology practitioners worldwide. In particular, after establishing our profession in Europe and the U.S., I-O psychologists have extended our service in emerging markets starting with the "BRIC" countries (i.e., Brazil, Russia, India, and China), whose GDP yearly growth exceeded 10%, nominal GDP exceeded $600 billion and populations exceeded 100 million. Today, as the "MIST" countries (i.e., Mexico, Indonesia, Spain, and Turkey) approach these same criteria for economic superpowers, our profession has once again begun the adaptive process to meet the needs of these emerging markets. But with all this growth and volatility, there is a clear need for tips of the trade helping I-O psychology practitioners work in emerging markets.

For I-O psychologists working in the North America and Europe, emerging markets are a scarcity or a distant topic. However, in other parts of the world, dealing with the growing pains of emerging markets is customary. As such, we thought it would be worthwhile to explore how practitioners overcome these growing pains. Specifically, we are interested in tackling three critical questions:

1. How do emerging markets differ from the mature market in terms of workforce strategies?
2. What practices are universal across emerging and mature markets?
3. What are some workforce strategies I-O practitioners should use in emerging markets?

To address these questions, we are very fortunate to have a terrific team of contributors from the nation of Singapore, **Drs. James and Alison Eyring**. James Eyring holds a PhD and MA in industrial-organizational psychology. He is the chief operating officer of Organisation Solutions and leads the global consulting practice. He has over 20 years of experience in executive development and human resources, specializing in executive coaching and leadership development. James has worked for PepsiCo, Dell, and Motorola and now works with clients such as Cisco, BHP Billiton, InterContinental Hotels Group, Nokia Siemens Networks, and GSK. Most recently, he has taught at the Helsinki School of Economics and the Singapore Management University and is actively conducting research in the area of leadership and distributed organizations.

Alison Eyring holds a PhD and MA in industrial-organizational psychology as well. She is the founder and chief executive officer of Organisation Solutions. She has 25 years of experience in large-scale organization design and change and executive development. Alison works closely with global leaders and their organizations, including Royal/Dutch Shell, BHP Billiton, Chubb Group of Companies, NEC, and Thomson Reuters. She also serves as an adjunct associate professor at the National University of Singapore. Educated in the U.S. and Spain, Alison has lived on four continents and has resided in Singapore since 1999. Alison serves as chair of the Board for the Asian Collaborative Organisation Research Network (ACORN).

Workforce Strategies in High-Growth Markets: Perspectives From Asia

Many Western multinational companies (MNCs) have turned to emerging markets in Asia over the past decade to fuel their growth. China, India, and Indonesia have attracted much of this investment capital. As a result, many MNCs have large and complex businesses in these markets. HP, for example, has more than 18,000 employees in

China. A growing number of Western MNCs now operate in as many cities in China as they do in the U.S. Because of their size and complexity, countries like China and India are more frequently reporting directly to the CEO, alongside their North American and European counterparts.

These markets have their own unique talent management challenges, including:

- High rates of revenue growth. Companies established in markets for over 20 years may still experience growth rates > 20%. Newer entrants experience growth > 60%
- Limited talent pools and therefore greater competition for talent
- High employee expectations for rapid promotion and rising compensation
- Job complexity caused by complex supply chains, government relations, and other factors

Companies have had to adapt their HR practices to meet these challenges. The most successful companies have adapted their workforce strategies to suit high-growth market demands. Companies that have failed to adapt have struggled to achieve their growth goals. High rates of revenue growth often mean that an employee who can successfully fulfill the responsibilities of his job today may find the job has outgrown him within a very short time. Practices to overcome this include "over hiring" for open positions (i.e., hiring someone at a grade level higher than needed based on future revenue expectations). A less common, but successful, strategy is proactive mapping of talent in the external market. Leading companies track talent for years in the hopes of hiring the person with the right, critical skills. One technology firm told us that it tracked a research scientist in India for 10 years and was able to hire the person when he was finally ready to consider moving companies.

These markets are also challenged by a limited talent pool (e.g., limits in language capability). As these markets grow, the competition for talent has become fierce. For years, Western MNCs were an employer of choice compared to their local MNC counterparts. Over the past 5 years, they have lost this advantage. Asian MNCs often attract mid- and senior-level leaders with the opportunity to lead a business in their home country. Increasingly, they offer more interesting work, more autonomy (fewer hierarchical structures), and greater opportunity for advancement within one country. Western MNCs who take care to define a locally relevant employee value proposition (i.e., a proposition that is valuable and competitive in the context of a local labor market), communicate this, and act on it are better able to retain the talent.

These limited talent pools also have resulted in increasing expectations for promotions. Employees in India and China have the highest levels of job hopping in the world, and most of this is driven by the need to show success. We know many HR leaders who have received calls by concerned parents over the advancement of their child in the company. MNCs that are successful in managing this often adapt their compensation systems to show advancement in pay and in title. The most successful companies also take risks on their employees, promoting mangers to much more senior positions than their counterparts in slower growth markets.

This rapid promotion creates its own challenges. Many employees are promoted faster than they are ready, or their jobs outpace their own development. Companies address this issue in part by investing more in employee development. This includes creating core management training programs suited to the needs of the emerging market. In addition to core management training and high potential development, some companies have adapted their organizational structure to address this challenge. Although most Western MNCs have gone through decades of delayering and increasing spans of control, a smaller number of companies offer smaller spans of control as a way to help new supervisors learn how to lead before they manage a team of 10 or 14. They also are more likely to add a level of hierarchy to help develop leaders. Western MNCs who think of organizational hierarchy purely as a cost and inhibitor of performance disadvantage themselves in these markets.

Not all practices need to be modified for emerging markets. Good people management skills are important everywhere. Strong interview and selection practices are important. Although some modifications may be required, many talent management practices will work in emerging markets.

Some of the best practices we have seen for designing relevant talent management processes include:

- Creating a local strategy for use in emerging markets to ensure that regional or global strategies are adapted to local needs
- Segmenting markets globally and applying different HR practices in high-growth markets versus those that are growing more slowly
- Allowing greater flexibility in emerging markets to ensure that HR practices can compete with local company practices

- Allowing greater flexibility in organizational structure (spans and layers) for companies that are growing rapidly

For I-O psychologists working in multinational corporations who want to attract, develop, and retain talent successfully in these markets, we offer the following advice in Table 1. Please feel free to use this as a cheat sheet for your own work.
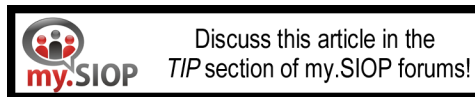
See You Next Time!

We leave you with this parting thought: "I don't think anyone now really understands the planetisation of mankind, really understands the new world order emerging through all this period of strain and pain and contradiction, so more than ever, we need to have an internal sense of navigation." These words from William Irwin Thornton underscore the need for effective business practice in emerging markets. Sharing lessons learned from all cultures and taking best practices to new frontiers, we can strive for more integrated workforce strategies for improving the employee experience. Until next time, goodbye, zaijian and adios!

WE NEED YOU AND YOUR INPUT! We are calling upon you, the global I-O community, to reach out and give us your thoughts on the next topic: local I-O communities of practice and their influence on professional development. Give us your insights from lessons learned in your practice. We are always looking from contributors, and we will be on the lookout. To provide any feedback or insights, please reach us by email at the following addresses: mo.wang@warrington.ufl.edu and alexander.alonso@shrm.org.

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Marcus W. Dickson
Wayne State University

When I first started at Wayne State, back those many years ago, Psychology was housed in the College of Science (we have since merged our Colleges of Science and Liberal Arts). Back then, it was pretty clear that to the other departments, psychology was considered to be on the fringe of "science." It was also pretty clear that to my departmental colleagues, I-O was considered to be on the fringe of psychology. So we I-O types were on the fringe of the fringe.

Today, though, psychology and I-O in particular are finding our way to the forefront of many conversations about the future of higher education. There's a lot of discussion going on of late in state legislatures and governors' mansions about undergraduate education at state colleges and universities, with a disconcertingly common theme of trying to influence the undergraduate curriculum to produce graduates who are more "job ready." *The New York Times*, in discussing the goals of the Florida state legislature and governor, said "The message from Tallahassee could not be blunter: Give us engineers, scientists, health care specialists and technology experts. Do not worry so much about historians, philosophers, anthropologists and English majors" (Alvarez, 2012). The same article goes on:

> To nudge students toward job-friendly degrees, the governor's task force on higher education suggested recently that university tuition rates be frozen for three years for majors in "strategic areas," which would vary depending on supply and demand. *An undergraduate student would pay less for a degree in engineering or biotechnology — whose classes are among the most expensive for universities— than for a degree in history or psychology.* State financing, which has dropped drastically in the past five years, would be expected to make up the tuition gap. (Alvarez, 2012, emphasis added)

These discussions are often couched in the context of what an undergraduate student should be expected to know—or be expected to be able to do—in order to be a contributing member of society. Another way of saying "be a contributing member of society" is "employed and paying taxes," it seems. Indeed, in North Carolina, Gov. Pat McCrory has repeatedly argued that state funding levels for state community colleges and universities should be based on how well those schools succeed at placing their students in the job market.

> "'Right now, we pay based upon how many students you have, not on the results of how many jobs you're getting people into," McCrory said. "I'm looking at legislation right now—in fact, I just instructed my staff yesterday to go ahead and develop legislation—which would change the basic formula in how education money is given out to our universities and our community colleges. It's not based on butts in seats but on how many of those butts can get jobs.'" (Binker & Sims, 2013)

At my school as at many schools, Psychology is one of the most popular majors on campus. We have about 19,000 undergraduates, and about 1,100 of them are Psychology majors. We provide a substantial amount of tuition revenue to the university as our students take classes on the way to degree. The problem, of course, is that in many of the reported conversations with legislators and governors, psychology as a major is grouped in with other liberal arts majors that are presumed not to lead to students being easily employable. To some extent, that's true— if the focus is on employment in the field that shares the name of the major. So while a recent graduate with an accounting major may be able to get an entry level job doing accounting, a recent graduate with a psychology major is typically not able to get an entry-level job doing psychology. So there is much ado about colleges and universities preparing students for the business world, along with questions about whether psychology does that (though the large numbers of students seeking psychology degrees suggests there may be other valuable reasons for considering it as a major).

So we know that there are lots of problems with these revised funding arguments (should we focus on graduates getting jobs within six months of graduation or on their career success five or more years post-graduation; liberal arts majors are touted as promoting critical thinking skills which is what most surveys of employers suggest employers want; etc.). But is it true that psychology is one of those degrees that states shouldn't want to promote, and might even

want to charge more for? What does the APA have to say about it? Surely they are defending the psychology major.

On APA's website, under the heading "Career choices with a Psychology Bachelor's degree", there is a 2009 article that starts this way:

Congratulations on your psychology degree! Now, what are you doing with it?

First, the bad news: If you're hoping to get a psychology-related job, the odds aren't in your favor. A 2003 survey by the National Science Foundation found that of the 122,800 people who graduated with BS degrees in psychology, less than 5 percent got jobs in the field.

Now, the good news: Employers of all stripes want and need your communication and interpersonal skills; your ability to collect, organize, analyze and interpret data; and, perhaps most important, your strong understanding of human behavior. As a result, many psychology majors find jobs managing human resource departments or working as recruiters, according the PayScale Salary Survey. (Martin, 2009)

When I read that, I was shocked. When APA talks about what you can do with a bachelor's degree in psychology, they lead with I-O-related careers. And that led me to wonder if that could go even further: Do Psych majors who get a solid grounding in I-O have better employment and early career success than students who don't? I'll say right up front, I have no data on this but I have to suspect that it would be true.

I spent some time looking over the undergraduate curricula of several colleges and universities that have at least some I-O psychologists on the faculty, ranging from community colleges to Research I doctoral training programs. I was looking to see what sorts of courses were offered in what could be considered I-O psychology (i.e., not Statistics, even though lots of I-O faculty teach Statistics; not research methods because that is common across all areas of psychology; etc.). At many schools, there was one course in I-O: the standard "Intro to I-O Psychology" under a variety of names. In some cases, the same introductory content was covered in two courses: one "I" and one "O." Occasionally there were some stray single courses on the books that clearly were linked to specific faculty members there, like a course in work motivation at a small college where the I-O person on faculty specializes in that area.

But in a few places, there was an extensive set of offerings of undergraduate courses in I-O topics. The broadest set of offerings I found in my very nonscientific search was six I-O related courses, including a 2-semester Intro I-O sequence, work motivation, leadership, personnel selection, and occupational health psychology. There are some schools with pretty impressive offerings of I-O-related undergraduate courses, and I have to suspect that undergraduate psychology majors who graduate having chosen to take personnel selection, leadership, occupational health psychology, work motivation, and similar courses are better prepared for the non-psychology-as-a-career workforce than those who haven't taken such courses.

This brings me full circle to the idea that started this column. Right now, psychology is often lumped in with other liberal arts degrees that are presumed to be less desirable and valuable by some state legislatures and governors. However, it seems likely that we in I-O have the capacity, either now or with a few additional courses added to our curricula, to counter that argument, at least for a portion of our students. And in doing so, do we become more or less "fringe" in our departments?

I am eager to make use of the new all-digital format for *TIP*, and so I would welcome your comments on the my.SIOP forums. I'll be happy to join in the conversation, as well! I am, as always, available to continue the discussion at marcus.dickson@wayne.edu.

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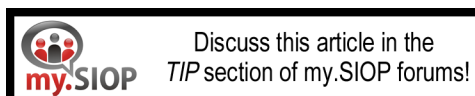
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Dear Hugo

Paul M. Muchinsky*
University of North Carolina at Greensboro

Dear Hugo,

It's been about 100 years since you left us in 1916. I thought I would fill you in on what you missed. I really don't know where to begin. Don't worry, not everything has changed. The professors in the basic areas of psychology still think they are better than us, and we still haven't found negative variance. It had been a long 8 years for you since the Chicago Cubs last won the World Series. Now it's up to 105 years since those poor bastards have tasted champagne.

Remember one day in 1915 you skipped class at Harvard and went to Fenway Park to see that exciting rookie pitcher of the Red Sox, Babe Ruth? I'm surprised the ball park was big enough to hold both of you. He went on to become the founder of modern baseball, and you went on to be recognized as the founder of industrial psychology. That's right, Hugo. You are credited with establishing the field of industrial psychology! Remember Lillian Moller? She got married and her name became Lillian Moller Gilbreth. About 60 years after you, industrial married organizational. The field is now called industrial-organizational psychology.

We've made some real progress since your time. Remember how honked off you would get when your validity coefficients rarely got much above .40? We still have that same problem today, but we found a way to make ourselves feel smugly content using something called a correction formula. I'd tell you it is like putting validity coefficients on steroids, but you wouldn't know what I meant. So I'll say it is like sticking them in fertilizer and watching them grow. Sometimes they grow to be in excess of 1.00! Nobody seems to mind very much. But you have to hold your nose when you interpret them, if you catch my drift.

Remember the time you and Henry Ford were in that saloon when a water main broke outside the front door? Henry told everyone to leave through the back door. We now study that stuff. It's called directive leadership. Then Henry saddled up to the bar, saying now there would be more beer for just the two of you. We study that stuff too. It's called Machiavellianism.

This should make you feel real good. Remember that terrific meal your mother used to make? She called it Bavarian goulash. She would empty the cupboards and ice box, placing everything in a big bowl. She would mix it all up, adding a little of this and a little of that. Then she would make a few adjustments. She used to say if you really knew how to work it, you could fashion just about any result you wanted. Her resulting Bavarian goulash impressed everyone, although no one really understood what all was in it, or what exactly she did to make it turn out that way. Hugo, we are still following your mother's recipe today! That's right, except we no longer call it Bavarian goulash. Now it's called meta-analysis.

Remember that time you caught your lab assistant goofing off, and you gave him a swift kick in the keister? We now study that, and call it the behavioral approach to motivation. Then you told him if he ever goofed off again, the only job he could ever get was shoveling shinola in Southie. We now study that too, and call it the cognitive approach to motivation. We now also study how supervisors like you respond when they are stuck with an employee like him. We call it bullying.

Remember how Yale would always kick Harvard's ass in football? Nobody could figure out why. It turns out the Yale football coach was decades ahead of his time. He gave a test of intelligence to every Yale student and selected the people with the 12 highest test scores. The top 11 became starters, and one more made the team as a back-up in case someone got a brain cramp. In the 1970s we concluded that all you need to perform any job was intelligence. But we wimped out by not calling it intelligence and started referring to it by a more socially palatable term, "general mental ability." We even gave it a symbolized abbreviation, g. So why did Yale always beat Harvard in football? Because Yale outnerded Harvard, that's why. In honor of the old Yale football coach, nowadays after a player scores a touchdown, he yells out, "g-whiz!"

You missed some really big events over the last 100 years: two world wars, nuclear energy, lunar landings, and disco. So far you've missed out on two miracles. One was the '69 Mets winning the World Series. The second was we discovered you could increase the estimated validity of a test by decreasing its reliability. I swear both happened. I don't know which is more amazing.

All the professors today teach with something called PowerPoint. Except me. I still use chalk, just like you did. They say I am a dinosaur, but you are my hero. Remember the time you attended that fancy dinner party at Teddy Roosevelt's house? You said you spent the evening hobnnobbing with J. P. Morgan, John D. Rockefeller, Andrew Carnegie, and the rest of the high society crowd. For some reason I fixated on that story. Quite frankly, I'm probably known more for it than anything else.

Well, I don't want to take up too much of your time. Maybe you are playing horseshoes with Walter Dill and Walter Van Dyke. That's another thing about you I admire. You only needed two names, a first and a last, to have people know you. Not like these pretentious types who need three and four names. Perhaps now you've met a guy who was known by only one name. Some people think he was divinely inspired. He called himself "Elvis."

Your devoted descendent,

Paul

P.S. Next time I will tell you all about "tweets," or as you would have called them, "tveets."

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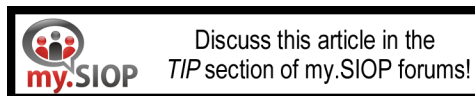
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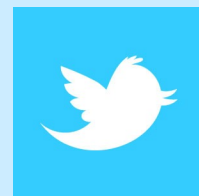
US & Vulcan Society v. NYC: Can Disparate Impact Become a Pattern or Practice of Discrimination?

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Late spring and early summer are usually quiet when it comes to major EEO court rulings. We were preparing a column previewing Supreme Court rulings on two important affirmative action cases that are expected later in 2013. Then on May 14, the 2nd Circuit ruled in the latest version of *US & Vulcan Society v. City of New York, et al.* This case started as a traditional disparate impact testing scenario that we are used to seeing in the police and fire personnel selection realm but has transformed into something we haven't seen before. We think that the chronology of rulings will be of interest to I-O psychologists for a variety of reasons. As a set they represent an interesting disparate impact case where the plaintiffs prevailed. However, the most important issue in this case from our perspective is whether it is valid to charge pattern or practice for knowingly using written tests that produce adverse impact and, are arguably, not valid. For now at least, a divided panel of the 2nd Circuit says no, and we will explain how and why.

Some Broader Context

This column has recently devoted a substantial amount of space to rulings related to differentiating pattern or practice and disparate impact theories of discrimination. In fact, in the last 2 years we reviewed a controversial ruling in *Grant v. Metro* (http://www.siop.org/tip/jan12/11gutman.aspx) and **Kayo Sady** wrote a guest commentary on the ruling in *Chin v. Port Authority* (http://www.siop.org/tip/Jan13/07_gutman.aspx).

In *Grant v. Metro (2011),* a class alleged both pattern or practice and disparate impact based on stock statistics that compared workforce representation at various levels. A divided three-judge panel of the 6th Circuit Court considered a number of issues, and most relevant for this column was differentiating applicant flow disparities stemming from a facially neutral process (which, in our opinion, is the probative issue for a prima facie case of disparate impact) from anecdotal evidence of discriminatory decision making coupled with disparities between minority and nonminority employees in different job categories (which, in our opinion, is the probative issue for a prima facie case of traditional class-wide disparate treatment).

In *Chin v. Port Authority of New York & New Jersey (2012),* the persuasiveness of a disparate impact claim was determined via the combination of disparities stemming from a facially neutral selection procedure and anecdotal evidence. The disparities were not statistically significant according to the "Two or Three Standard Deviation" criterion, yet the Second Circuit Court of Appeals ruled that the prima facie case was made when statistics were combined with anecdotal evidence. As Kayo Sady noted in his insightful article, the introduction of anecdotal evidence is historically the domain of pattern or practice cases and not disparate impact cases, but the ruling would suggest that if statistical analyses are inconclusive, strong anecdotal evidence may meet requirements for a prima facie case under disparate impact theory. This was unexpected, and it appeared as if tangential anecdotal evidence functioned almost as a nonstatistical measure of practical significance supplementing any actual disparity analyses of the process being scrutinized.

Art recently summarized a third case related to this issue in an April 2013 blog.[1] *In Puffer v. Allstate Ins. Co*., the 7th Circuit upheld a lower court ruling rejecting class certification on technical grounds originally for pattern or practice, whereas the claim on appeal was for disparate impact. It's a little more complicated than that, but in rendering the ruling, Judge Flaum, speaking for her two counterparts on a three-judge panel, made some important points

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[1] For Art's review of the case click here (http://ofccp.blogspot.com/2012/04/7th-circuit-makes-important-ruling-on.html).

relating to the role of the Supreme Court's ruling in *Dukes v. Wal-Mart* in rejecting the original claim for class certification on the pattern or practice charge, and the distinction between pattern or practice and disparate impact theory. In Art's view, this ruling was worth highlighting because Judge Flaum wrote an insightful ruling and correctly differentiated between the two theories of discrimination, which doesn't always happen.

As you can see, controversy and confusion around differentiating pattern or practice from disparate impact is alive and well 25 years after the Supreme Court confused the issue in *Wards Cove v. Atonio* (1989).[2] Both theories involve class-wide allegations of discrimination but differ with regard to employer intent and the legal scenarios that follow. However, *US & Vulcan Society v. NYC* seems to be tackling a different but related issue. Instead of asking whether *it is it pattern or practice or disparate impact scenario,* this case seems to be asking *whether a history of potential disparate impact can transform into intentional discrimination.* In other words, does (a) knowing about and living with consistent and significant disparities over time coupled with (b) not being entirely confident in the job relatedness of the selection procedures producing those disparities result in intentional discrimination?

The next section of the article reviews the chronology of rulings in *US & Vulcan Society v. NYC,* with particular emphasis on the appeals court ruling from May 2013. The early rulings focused on traditional disparate impact issues, and although these are of interest to I-O psychologists, they don't tread much new ground. The last two rulings considered when and whether a disparate impact claim can transform into something more egregious. The article concludes with a consideration of the consequences of transformation from disparate impact to pattern or practice, whether that notion could make sense in some situations, and potential implications for I-O psychologists.

Early Rulings

In Ruling I *(US v. City of New York, 2009),* the Department of Justice (DOJ) sued New York City for its use of entry-level firefighter exams because they adversely impacted Black and Hispanic applicants, and were not proven to be job-related and consistent with business necessity. This ruling occurred on July 22, 2009.

The DOJ sought *"appropriate action to correct the present effects of its discriminatory policies and practices."* The Vulcans and several named individuals were then permitted to intervene. They joined the DOJ charge on adverse impact, added a pattern or practice charge for Black applicants, and added to the list of defendants the NYC Citywide Administrative Services (DCAS) and two individuals in the official and personal capacities (Mayor Michael Bloomberg and then Fire Commissioner Nicholas Scoppetta). The DOJ did not join these latter claims. District Court Judge Nicholas G. Garoufis granted summary judgment on the adverse impact claim but permitted the City to continue to use one of the tests on an interim basis pending its validation.

Ruling II followed shortly thereafter when, on September 29, 2009 (*US & Vulcans v. City of New York, 2010*), Judge Garoufis deemed the test to be invalid in accordance with the 2nd Circuit precedent for content validity in *Guardians v. CSC* (1980).

There was little debate on whether the exams produced disparities against Blacks or Hispanics. Every test that had been administered in the last decade produced significant disparities. Plaintiffs also used utilization analyses to show that the representation of minorities in the firefighter workforce was very low compared to census data for the area and to representation of firefighters in other large metropolitan areas, which is a traditional pattern or practice analysis.

There was more debate regarding the content-oriented validity research around the tests. To assess the appropriateness of this research Judge Nicholas G. Garoufis applied the validity standards from *Guardians,* in which the following five prongs for content-oriented validity were expressed:

1. The test makers must have conducted a suitable job analysis;
2. They must have used reasonable competence in constructing the test itself;
3. The content of the test must be related to the content of the job;
4. The content of the test must be representative of the content of the job; and
5. There must be a scoring system that usefully selects from among the applicants those who can better perform the job.

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[2] For a review of this important case, readers should refer to the column reviewing *Grant v. Metro* here (http://www.siop.org/tip/jan12/11gutman.aspx).

For those of you interested in the appropriateness of content-oriented validity research, we think that the 2009 rulings are worth reading. Judge Garoufis found the job analysis to be suitable and noted that the city avoided common pitfalls from previous litigation like (a) not demonstrating any relationship between abilities and tasks, and (b) not measuring only tasks and abilities that could be learned on the job. However, that was the only *Guardians* prong that Judge Garoufis ruled had been met. He noted that the test was not constructed in a competent way because firefighters were too heavily involved in item writing and SME review occurred too late for revisions to be made. He also found that the test content was not relevant to job content for a variety of reasons. One involved a literal interpretation of the *Uniform Guidelines* (1978) section on the appropriateness of content-oriented validation for certain worker characteristics. He noted that content validation is an inappropriate validation strategy if the exam seeks to measure internal, unobservable mental traits (in this case flexibility of closure, speed of closure, and problem sensitivity, as well as personality characteristics like integrity, adaptability, tenacity, work standards, and resilience).

We note that this *Uniform Guidelines* notion of content-oriented methods being inappropriate for abstract concepts (a) is controversial, (b) is inconsistent with contemporary professional theory and practice, and (c) has been ignored in much recent case law (see Gutman & Dunleavy, 2012 for review). Regardless, Judge Garoufis found this issue to be probative and also noted issues with factor and reliability analyses associated with the test as they related to prong 3. Given failure to meet prongs 2 and 3, prongs 4 and 5 were non-issues, but Judge Garoufis took the time to note that neither prong would be met even if they mattered. Perhaps the most obvious problem surrounded the test cut score, which was arbitrarily set at 70% because that is what is required in civil service rules.

Later Rulings

Ruling III occurred on January 13, 2010, when Judge Garoufis authored a ruling in which he granted summary judgment on the Vulcan's charge of pattern or practice but denied the charges relating to the added defendants. On the latter and more important issue (for our purposes), Judge Garoufis inferred from statistical evidence that the City's examination policy denied appointments to 144 Black applicants and that 112 Black applicants were denied approximately 34 year's worth of wages they would have received absent the policy. Judge Garoufis also credited *"historical, anecdotal, and testimonial evidence showing that intentional discrimination was the city's standard operating procedure."*

This was the game changer in the sense that the discrimination had transformed from unintentional disparate impact from tests to intentional discrimination. The disparities and validity evidence hadn't changed from Ruling II to Ruling III. What had changed was a more holistic approach to the story, which, coupled with the disparate impact ruling, created a pattern or practice of discrimination in the eyes of Judge Garoufis.

That brings us to Ruling IV, the 2nd Circuit's divided decision on May 14, 2013. The most important aspect of the Act III ruling by Judge Garoufis is that the defendants failed to successfully rebut statistical evidence presented by the Vulcans as it relates to the pattern or practice claim. It is on this issue, and this issue alone, that the 2nd Circuit was divided.

The two majority judges (Newman and Winter) opined that pattern or practice lawsuits (most notably the landmark ruling in *International Brotherhood of Teamsters v. United States)* follow the same rules as individual disparate treatment claims such that prima facie evidence of intentional discrimination requires the defendant to merely offer a nondiscriminatory reason for the challenged action, forcing the plaintiffs to prove that the explanation offered is a pretext for discrimination. The prima facie and defense burdens are considered lighter burdens of "production" leaving the pretext phase as the only one with a heavier burden of "proof." Or as stated by Judge Newman (writing for Judge Winter):

> A central issue in the pending case is what showing an employer must make to satisfy its burden of production in a pattern or practice case. In *Teamsters* the Supreme Court stated that the employer's burden was "to defeat the prima facie showing of a pattern or practice by demonstrating that the Government's proof is either inaccurate or insignificant." The emphasized words raise a question as to whether the Supreme Court thought the employer's rebuttal evidence must be directed at the statistics that often constitute the prima facie case of discrimination or simply at the rebuttable presumption of discrimination that arises from those statistics.

In plain English, the question here is whether the defendant's burden of production (a) must directly rebut the plaintiff's statistics or (b) simply offer an explanation independent of the statistics that is nondiscriminatory. Judge Newman ruled

that the defendant is free to rebut the statistics (a much weightier task, particularly in this case), but does not have to do so. Then Judge Newman proceeded to explain why the city met its burden of production. Accordingly:

> The City produced evidence attempting to rebut the inference that it had acted with a discriminatory intent. It articulated a nondiscriminatory reason for using the challenged exams—the fact that they were facially neutral. The City also relied on its contention that the exams had been prepared in an attempt to comply with "acceptable test development methods."

In this scenario it was acceptable for the city to recognize that the tests, which are a facially neutral process, produced adverse impact, as long as they didn't go into it with that expectation. As long as there was no intent to create a facially neutral selection procedure for the purpose of adverse impact against certain groups, then the test being facially neutral insulates the user from a pattern or practice allegation.

Judge Pooler dissented for several reasons. The gist of Judge Pooler's arguments are (a) pattern or practices and individuous disparate treatment scenarios are not the same; (b) the pattern or practice charge virtually demands direct statistical proof; and (c) the defendants were required to directly rebut the statistical evidence (and not simply offer a nondiscriminatory explanation). Or in her own words:

> Rather than responding to the statistical evidence, the City only "argu[ed] that the Intervenors ha[d] not proved that the City harbored a subjective intent to discriminate against black applicants." In essence, the City ignored the inevitable conclusion of the statistics and tried to focus on intent. But, "[a]t this stage, lack of direct proof regarding the employer's mental state is simply immaterial to the question of whether the City can rebut the presumption of unlawful discrimination created by the Intervenors' prima facie showing." Despite the City's correct assertion that what "actually motivate[s] the employer's decision" is relevant departure from the Teamsters framework is "fatal" where the motivation did not address the statistical evidence.

This does not end the case; it merely reverses Judge Garoufis' summary judgment relating to pattern or practice. From here, one of two things may happen. Divided three-panel rulings can lead to an en banc ruling by all available 2nd Circuit judges. Absent that, the case would go to trial, and whatever ruling occurs there will undoubtedly lead to an appeal to the Supreme Court. Judge Newman noted that, in view of some of the acerbic statements (e.g., that the City's rebuttal evidence was "either incredible or inapposite"), the City won on its appeal to have Judge Garoufis disqualified to try the next phase of the case. Stay tuned.

Intentional Discrimination by Way of Disparate Impact

We think it is worth considering whether intentional discrimination by way of disparate impact makes sense. On a more general level, of course it can make sense. For example, after the 15th Amendment guaranteed former slaves the right to vote, White landowners used facially neutral criteria to limit this right (e.g., own land, read and write, pay poll taxes). It is hard to imagine lack of intent in that scenario. Even in *Griggs v. Duke Power* (1971), the case that started the disparate impact ball rolling, it is arguable that the defendant instituted certain requirements (e.g., high school diploma, passing scores on cognitive tests) because they knew those requirements would reduce Black participation in the hiring and promotion processes. There may also be scenarios where a selection process was intended to be facially neutral yet becomes a pattern or practice because it isn't used in a way that is actually facially neutral. For example, administering a physical test to women but not to men or a writing sample to certain racial/ethnic minority groups but not to nonminorities are examples of how selection procedure use may result in patterns of intentional discrimination.

One other point is worth noting. From an outcomes perspective, the implications of a disparate impact claim transforming into a pattern or practice claim are meaningful. Pattern or practice claims of intentional discrimination may result in compensatory (i.e., for pain and suffering) and/or punitive (i.e., punishment for violations that are with malice or reckless indifference) damages, which are not available under a disparate impact theory of unintentional discrimination. In addition, many organizations have liability insurance that may cover damages associated with a disparate impact ruling against them but usually do not cover scenarios of intentional discrimination. Further, from an organizational image perspective, there are obvious differences between allegations of class-wide intentional discrimination as compared with allegations of using a selection procedure that produces disparities and is not job related.

Conclusion

At the end of the day the take home message of this case is an intuitive one. NYC simply needed to articulate that a test was facially neutral as the response to a pattern or practice allegation (a lighter burden) and didn't necessarily need to rebut statistical disparities (a heavier burden) associated with that allegation. In other words, the fact that a selection procedure was facially neutral was the insulation against the pattern or practice allegation related to test use. Even if there was clear evidence that NYC knew they would lose a disparate impact allegation and continued to use the same selection process, it would appear that there needs to be additional evidence suggesting that the racial composition stemming from that process was what the city wanted (i.e., intent) in order for there to be a pattern or practice of discrimination. On a practical note, even if this ruling was reversed and the use of a potentially discriminatory test over time could mature into a pattern or practice of discrimination, we suggest that doing rigorous validation research before or during implementation and using that system in a facially neutral way decreases the likelihood that either form of discrimination happens.

For those of you that work in or with federal contractors, recall that pattern or practice allegations related to employee hiring still account for around 90% of the financial remedies OFCCP obtains in settlements for alleged victims of discrimination. These scenarios often have a different flavor relative to Title VII allegations (much to Art's aversion), primarily because they are usually based on applicant flow disparities of unstructured and highly subjective hiring processes. In these cases, OFCCP often alleges intentional discrimination because processes are not facially neutral due to the lack of structure. This scenario leaves the door open for a pattern or practice allegation that protected group status could be used in deciding who to hire and who not to hire. Using a structured selection system that is facially neutral and consistently administered removes the pattern or practice allegation from the equation because by definition that process is facially neutral and not based on protected group status. Again, this approach may be the safest way to mitigate risk and ensure that employee hiring is conducted in legally defensible ways, regardless of which form of discrimination may be alleged. Communicating this message to compliance and legal professionals is important.

The potential role of ambiguous historical context in discrimination cases would also seem to support HR risk management strategies (in addition to validation research) that I-O psychologists are in position to implement effectively. For example, objective and proactive risk audits assessing disparities stemming from selection procedures and the quality and persuasiveness of evidence associated with those procedures would seem to be of value, particularly if informed decisions can be made based on these audits. We suggest that organizations seriously consider these types of audits (even if they function primarily as a form of knowledge management to eventually inform on the historical context) as we all navigate through the complex maze of equal employment opportunity compliance.

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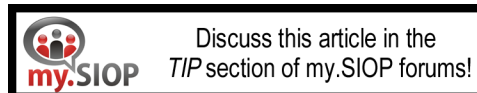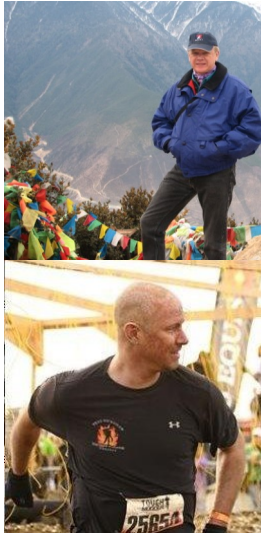
The United States of SIOP:
Geographic Locations of SIOP
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 In recent years there have been numerous discussions about where SIOP members are physically located in the U.S. in order to make various decisions in SIOP, such as where to hold the annual conference and the LEC. We analyzed available membership data to identify the geographic locations of all professional members. This article is based on the 2011 membership data and focuses on SIOP professional members located in the U.S.

All U.S. Professional Members

 We were interested in identifying the geographic locations for all SIOP professional members (as listed on their 2011 membership application forms). All U.S. based professional members are plotted on a U.S. map in Figure 1.
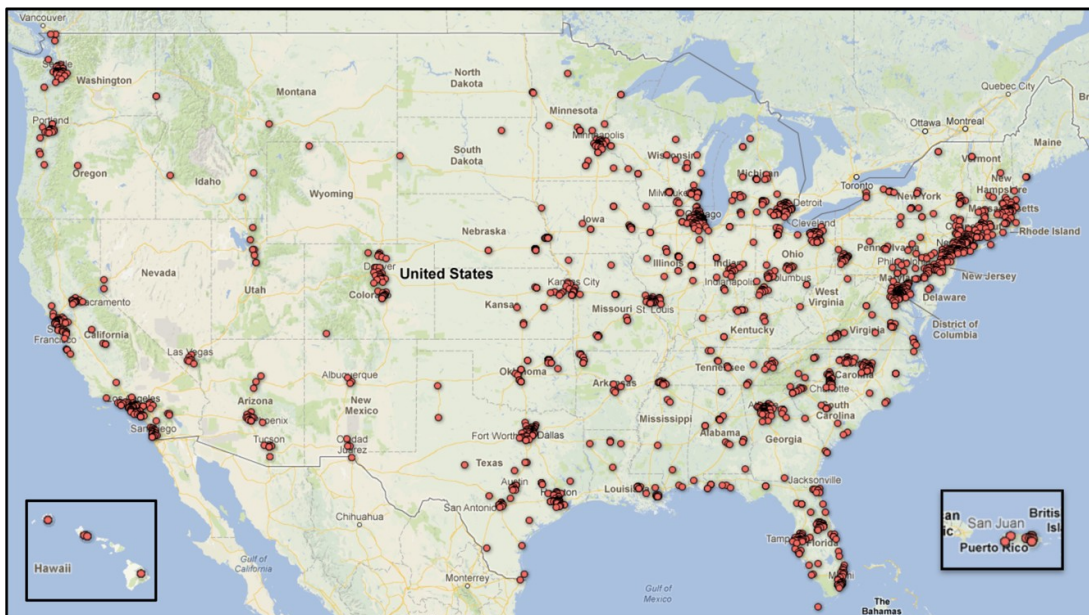
Based on the 2011 SIOP professional membership.

Figure 1. Location of all full SIOP members employed in the United States.

 The visual overview presented in Figure 1 suggests that a heavy majority of the professional members are located in the Eastern half of the U.S. with a few member groups in Colorado and along the West Coast. The Northeast region in particular has a heavy concentration of members (along the Washington, DC–Philadelphia–New York–Boston corridor). The Midwest, home to many industrial-organizational psychology graduate programs also has a large number of members.

 The top-20 Metropolitan Statistical Areas (MSAs), the top-20 states, and the top-20 cities for SIOP members are listed in Table 1.

Table 1
Rank Orders of the Geographic Locations of All Full SIOP Members in the US

| | Geographic Locations of all SIOP Members Employed in the United States* | | | | | | | |
Rank	Metropolitan Statistical Area (MSA)	# of Members	Rank	State	# of Members	Rank	City	# of Members
1	Non-Metropolitan	539	1	CA	210	1	New York	79
2	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	247	2	TX	202	2	Atlanta	70
3	New York-Newark-Jersey City, NY-NJ-PA MSA	218**	3	VA	201	3	Chicago	53
4	Chicago-Naperville-Elgin, IL-IN-WI MSA	141	4	NY	200	3	Minneapolis	53
5	Atlanta-Sandy Springs-Roswell, GA MSA	130	5	IL	181	5	Houston	52
6	Minneapolis-St. Paul-Bloomington, MN-WI MSA	95	6	FL	153	6	Arlington (VA)	42
7	Dallas-Fort Worth-Arlington, TX MSA	73	7	GA	148	7	Alexandria (VA)	37
7	Los Angeles-Long Beach-Anaheim, CA MSA	73	8	PA	128	8	Washington (DC)	34
9	Houston-The Woodlands-Sugar Land, TX MSA	72	9	OH	122	9	Pittsburgh	27
10	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	52	10	MI	111	10	Dallas	26
10	Pittsburgh, PA MSA	52	11	MN	110	10	San Diego	26
12	St. Louis, MO-IL MSA	50	12	NC	106	12	Charlotte	24
13	Detroit-Warren-Dearborn, MI MSA	48	13	NJ	96	13	Orlando	22
14	Seattle-Tacoma-Bellevue, WA MSA	45	14	MD	81	14	Fairfax	21
15	San Francisco-Oakland-Hayward, CA MSA	43	15	MO	68	15	Seattle	20
16	Boston-Cambridge-Newton, MA-NH MSA	37	16	CT	65	16	Tampa	19
16	San Diego-Carlsbad, CA MSA	37	17	TN	61	17	East Lansing	17
18	Charlotte-Concord-Gastonia, NC-SC MSA	36	18	CO	53	18	Portland (OR)	16
18	Orlando-Kissimmee-Sanford, FL MSA	36	19	WA	52	18	Bridgeville (PA)	16
20	Miami-Fort Lauderdale-West Palm Beach, FL MSA	35	20	MA	47	18	San Francisco	16

* Based on the 2011 SIOP professional membership, only the top 20 ranked locations are included

** When the NY/NJ/PA MSA is combined with the lower CT MSA, the # of members goes to 243.

Metropolitan Statistical Areas

The rank orders of the MSAs in general are probably what we might expect and often reflect the general population size of various urban areas.

Table 1 points out that a large number of our professional members (*n* = 539) are located in nonmetropolitan

areas. It turns out that 68% of these nonmetropolitan area members (n = 368) are academics, who are likely to be located in university/college towns. The first two ranked MSAs are probably not a surprise to anyone. The Washington, DC MSA and New York MSA (when the lower CT MSA is included) are virtually tied (247 vs. 243), however the Washington DC MSA has a much larger group of researchers than the New York MSA (69 vs. 5), whereas New York MSA has twice as many members in organizations (75 vs. 36).

What may be more surprising to some readers is the substantial number of professional members in the MSAs of Minneapolis (MSA n = 95), Pittsburgh (MSA n = 53), St. Louis (MSA n = 50), and Seattle (MSA n = 45). These cities have significant I-O psychology graduate schools, consulting firms, and/or business organizations that employ numerous members. It is a wonder why SIOP has ignored these cities as conference locations (surely hotel challenges could be overcome) and instead chosen urban areas with few SIOP members, such as Richmond (MSA n = 15), Charleston, SC (MSA n = 3), New Orleans (MSA n = 12), Honolulu (MSA n = 4), and Louisville (MSA n = 11).

It is worth noting some major MSAs that are not included in the top-20 rankings, such as Nashville (MSA n = 12), Indianapolis (MSA n = 13), Phoenix (MSA n = 17), San Jose (MSA n = 12), and Denver (MSA n = 21)

States

The top five ranked states for membership (CA, TX, VA, NY, IL) are clustered close together in number of members. For anyone familiar with our profession it is not surprising to see them at the top of the rankings. What may be unexpected is that Florida and Georgia are next in the rankings, as opposed to the four Midwest states that follow them. Florida has a large number of academic members (n = 64, 42% of the FL members), whereas Georgia has a large number of members in consulting (n = 71, 48% of the GA members) and in organizations (n = 42, 27% of the GA members).

Four states have over 200 professional members each and 12 states have over 100 members each. A few states only have one or two members (WY, MT, WV, VT, SD, ND). Hawaii, the site of next year's annual conference, has only five members, but Houston, the site of this year's annual conference, has 72 members in the MSA and 202 members in the state of Texas.

Cities

When reviewing the city rankings it is helpful to keep in mind that only members who provide addresses within the city limits are included. For some metropolitan areas many members are likely to live in suburbs outside the city limits.

Most of the cities listed in the top-20 rankings are known centers of I-O psychology (either for graduate schools [such as East Lansing], well known consulting firms [such as Pittsburgh], or large corporations [such as Seattle]). What is notable are the very high rankings for the cities of Minneapolis (#3), Pittsburgh (#9), and Seattle (#15); these are cities that SIOP has not used for conferences or meetings, although many of us know I-O psychologists in each of these cities. It is worth noting the cluster of four ranked cities near Washington DC: Arlington (#6), Alexandria (#7), Washington, DC (#8), and Fairfax (#14). This cluster may primarily reflect the large number of researchers located in this geographic area.

Consultant Members

As we have discussed in previous columns SIOP members were categorized into four employment categories based on 2011 member self-report data (Silzer & Parson, 2011):

- Consultants: 30.3% of professional members; in consulting firms and nonresearch consulting positions
- Organization-based professionals: 19.0% of professional members; in organizations and in government positions with a practice focus
- Academics: 43.5% of professional members; in universities and colleges
- Researchers: 5.1% of professional members; in research consulting firms & government research positions

We identified the geographic locations for SIOP professional members in each of these four employment categories. Figure 2 shows the geographic locations of professional members who are in consulting.
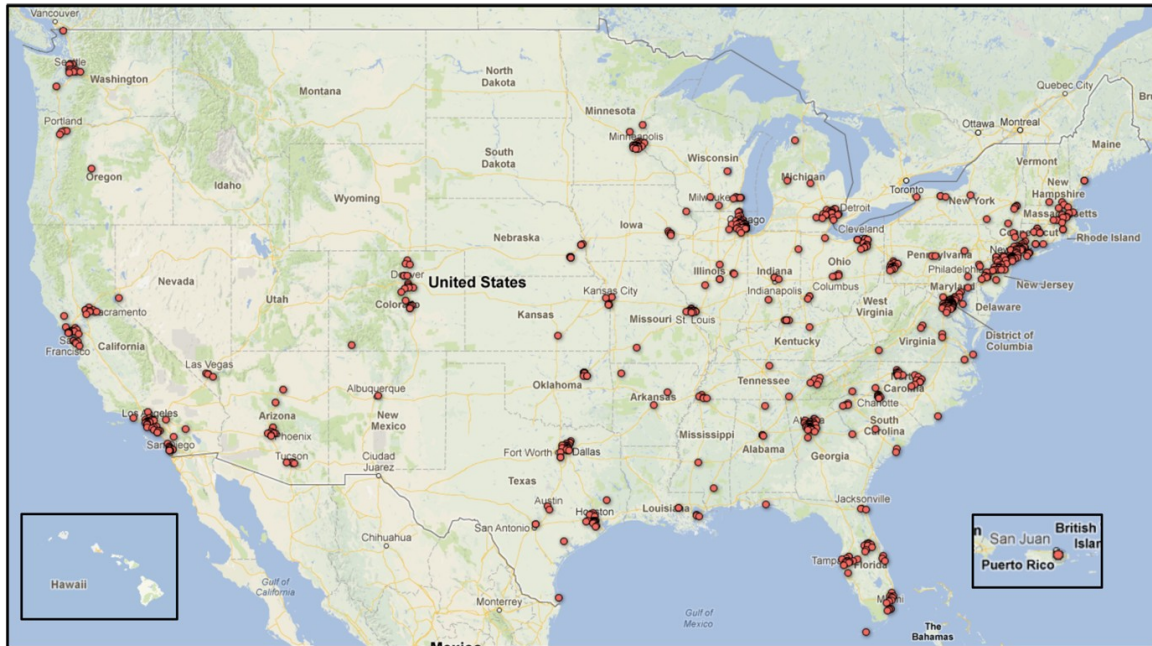
Based on the 2011 SIOP professional membership.

Figure 2. Location of all full SIOP members employed as consultants in the United States.

The U.S. map in Figure 2 shows a concentration of consultant members in the Eastern half of the U.S., particularly along the Eastern seaboard. They are also most likely to be located in and around metropolitan areas where their organizational clients are based. They are much less likely than academics to be based in nonmetropolitan areas. Table 2 lists the top-20 Metropolitan Statistical Areas, the top-20 states and the top-20 cities for SIOP members who are consultants (nonresearch).

Table 2
Rank Orders of the Geographic Employment Locations of Full SIOP Members Employed as Consultants in the US

Geographic Areas of SIOP Consultants Employed in the United States*								
Rank	Metropolitan Statistical Area (MSA)	# of Members	Rank	State	# of Members	Rank	City	# of Members
1	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	97	1	CA	77	1	Atlanta	38
2	Non-Metropolitan	89	2	VA	76	2	New York	34
3	New York-Newark-Jersey City, NY-NJ-PA MSA	78**	3	GA	71	3	Minneapolis	32
4	Atlanta-Sandy Springs-Roswell, GA MSA	70	4	NY	70	4	Arlington (VA)	23
5	Minneapolis-St. Paul-Bloomington, MN-WI MSA	54	5	IL	58	5	Alexandria (VA)	21
6	Chicago-Naperville-Elgin, IL-IN-WI MSA	53	6	TX	55	6	Chicago	18

Rank	MSA	n	Rank	State	n	Rank	City	n
7	Pittsburgh, PA MSA	35	7	MN	54	6	Washington (DC)	18
8	Dallas-Fort Worth-Arlington, TX MSA	28	8	PA	50	8	Bridgeville (PA)	16
8	Los Angeles-Long Beach-Anaheim, CA MSA	28	9	FL	47	9	Houston	12
10	Houston-The Woodlands-Sugar Land, TX MSA	20	10	NJ	33	9	Pittsburgh	12
11	San Francisco-Oakland-Hayward, CA MSA	18	11	NC	32	11	Dallas	9
11	Detroit-Warren-Dearborn, MI MSA	18	12	OH	28	11	Tampa	9
13	St. Louis, MO-IL MSA	17	12	CT	28	11	Roswell (GA)	9
14	Bridgeport-Stamford-Norwalk, CT MSA	16	14	MI	23	14	Decatur (GA)	8
15	Seattle-Tacoma-Bellevue, WA MSA	14	14	CO	23	14	Charlotte	8
15	San Diego-Carlsbad, CA MSA	14	16	MO	19	14	Greensboro	8
15	Tampa-St. Petersburg-Clearwater, FL MSA	14	16	MD	19	14	Saint Louis	8
18	Miami-Fort Lauderdale-West Palm Beach, FL MSA	13	18	DC	18	14	Princeton	8
19	Boston-Cambridge-Newton, MA-NH MSA	12	19	WA	16	19	San Diego	7
19	Cleveland-Elyria, OH MSA	12	20	AZ	13	19	Lincoln (NE)	7
						19	Los Angeles	7
						19	Louisville	7

* Based on 2011 SIOP professional membership, only top 20 ranked locations are included.

** When the NY/NJ/PA MSA is combined with the lower CT MSA, the # of members goes to 94.

Metropolitan Statistical Areas

Again the Washington DC MSA (MSA n = 97) and New York MSA (MSA n = 94; includes the lower CT MSA) are ranked at the top of the list with the most members in consulting compared to other MSAs. Minneapolis has a surprisingly large number of consultant members (MSA n = 54), perhaps because of several notable consulting firms that are based there. This is probably also true for Pittsburgh (MSA n = 35). The Atlanta MSA (MSA n = 70) also has a surprisingly large number of consultant members.

Many large MSAs have few consultant members such as New Orleans (MSA n = 3), San Jose (MSA n = 4), Kansas City (MSA n = 5), Phoenix (MSA n = 8), and Philadelphia (MSA n = 10). The small number of consultant members in these large cities may suggest business opportunities for SIOP members.

States

Many of the top ranked states are not surprises, just based on the size of the states. Again, Georgia (n = 71) and Minnesota (n = 54) may be unexpected, given the size of those states. Both, however, have well known I-O psychology graduate programs that support consulting careers, and both have large companies and regional business offices located in the state that hire local I-O consultants.

Some large states that have few consultant members include Arizona (n = 13), Wisconsin (n = 10), Oregon (n = 4), and Massachusetts (n = 12).

Cities

It is surprising that there are more consultant members living in the city of Atlanta (*n* = 38) than in New York City (*n* = 34). Perhaps Atlanta is a more livable city, whereas members in the New York region tend to live outside the city and commute into the city for work. Again Minneapolis and cities in the Washington DC area are hotbeds of consultants. Some large cities have few I-O consultants in the city limits, such as Los Angeles (*n* = 7), San Francisco (*n* = 6), Orlando (*n* = 4), Seattle (*n* = 4), and Philadelphia (*n* = 0).

Members in Organizations

SIOP members who work in organizations and in government positions with a practice focus are identified on the U.S. map in Figure 3.

Based on the 2011 SIOP professional membership.

Figure 3. Location of all full SIOP members employed in organizations in the United States.

The SIOP members in organizations are frequently based at an organization's headquarters, which often is located in a metropolitan area. Based on Figure 3, it seems that most of these members are located in the eastern half of the U.S and seem concentrated in urban areas. The top-20 Metropolitan Statistical Areas, the top-20 states, and the top-20 cities for SIOP members who are working in organizations are listed in Table 3.

Table 3

Rank Orders of the Geographic Employment Locations of Full SIOP Members Employed in Organizations in the US

	Geographic Locations of SIOP Members Employed In Organizations in the United States*							
Rank	Metropolitan Statistical Area (MSA)	# of Members	Rank	State	# of Members	Rank	City	# of Members
1	New York-Newark-Jersey City, NY-NJ-PA MSA	68**	1	TX	61	1	New York	17
2	Non-Metropolitan	63	2	CA	47	2	Atlanta	16
3	Atlanta-Sandy Springs-Roswell, GA MSA	38	3	GA	42	3	Houston	13
4	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	36	3	NY	42	4	Dallas	11
5	Chicago-Naperville-Elgin, IL-IN-WI MSA	32	5	IL	41	4	Seattle	11
6	Dallas-Fort Worth-Arlington, TX MSA	29	6	FL	31	6	Charlotte	10
7	Seattle-Tacoma-Bellevue, WA MSA	21	7	NJ	30	7	Chicago	9
8	Minneapolis-St. Paul-Bloomington, MN-WI MSA	20	7	NC	30	8	Minneapolis	8
9	Charlotte-Concord-Gastonia, NC-SC MSA	18	9	MI	28	9	San Diego	7
10	Houston-The Woodlands-Sugar Land, TX MSA	16	10	VA	27	10	Pittsburgh	6
10	San Francisco-Oakland-Hayward, CA MSA	16	11	WA	22	10	San Antonio	6
12	Los Angeles-Long Beach-Anaheim, CA MSA	14	12	MN	20	10	Frisco (TX)	6
12	Detroit-Warren-Dearborn, MI MSA	14	13	MD	17	13	Washington (DC)	5
14	St. Louis, MO-IL MSA	12	14	OH	16	13	San Francisco	5
15	San Diego-Carlsbad, CA MSA	8	15	PA	14	13	Orlando	5
15	Orlando-Kissimmee-Sanford, FL MSA	8	15	MO	14	13	Marietta	5
15	Tampa-St. Petersburg-Clearwater, FL MSA	8	17	TN	12	13	Bloomington	5
15	Memphis, TN-MS-AR MSA	8	18	CT	11	13	Purchase	5
19	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	7	19	CO	9	19	Roswell (GA)	4
19	Baltimore-Columbia-Towson, MD MSA	7	19	WI	9	19	Los Angeles	4
19	Bridgeport-Stamford-Norwalk, CT MSA	7				19	Memphis	4
19	Raleigh, NC MSA	7				19	Alexandria (VA)	4
19	Cincinnati, OH-KY-IN MSA	7				19	Englewood (CO)	4
19	Denver-Aurora-Lakewood, CO MSA	7				19	Round Rock	4
19	Austin-Round Rock, TX MSA	7						

* Based on 2011 SIOP professional membership, only top 20 ranked locations are included.

** When NY/NJ/PA MSA is combined with lower CT MSA, the # of members goes to 75.

Based on Table 3, the New York MSA (*n* = 75 with the lower CT MSA) has about twice the number of SIOP members in organizations as any other MSA. This is likely due to the large number of corporations based in NY, NJ, and lower CT. As might be expected the larger states (especially those with more business corporations) have more SIOP members in organizations than smaller states. Some midsize MSAs, such as Seattle (MSA *n* = 21) and Minneapolis (MSA *n* = 20), have more members in organizations than larger cities such as Philadelphia (MSA *n* = 7), Los Angeles (MSA *n* = 14), and Miami (MSA *n* = 5).

Generally larger states have more members who are in organizations than other states. States that have numerous corporate headquarters also are among the top-20 states, such as CT, MN, NJ, MD, and GA.

Some ranked cities seem clearly linked to one or more local business corporations, such as Purchase, NY (*n* = 5), and Round Rock, TX (*n* = 4).

Academic Members

SIOP members who work in academic positions are identified on the U.S. map in Figure 4.

Based on the 2011 SIOP professional membership.

Figure 4. Location of all full SIOP members employed as academics in the United States.

Based on Figure 4 it appears that academic members are more dispersed across the country than other employment groups, although still primarily based in the Eastern half of the U.S. For those of you familiar with academic members' affiliations, you can almost pick out the college towns where they are located.

Table 4 lists the top-20 Metropolitan Statistical Areas, the top-20 states and the top-20 cities where SIOP academic members are located.

Table 4

Rank Orders of the Geographic Employment Locations of Full SIOP Members Employed as Academics in the US

	Geographic Areas of SIOP Academics Employed in the United States*							
Rank	Metropolitan Statistical Area (MSA)	# of Members	Rank	State	# of Members	Rank	City	# of Members
1	Non-Metropolitan	368	1	IL	82	1	Chicago	26
2	New York-Newark-Jersey City, NY-NJ-PA MSA	67**	2	NY	81	2	Houston	25
3	Chicago-Naperville-Elgin, IL-IN-WI MSA	56	3	CA	78	2	New York	25
4	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	45	3	TX	78	4	East Lansing	16
5	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	33	5	OH	70	5	Atlanta	14
6	Houston-The Woodlands-Sugar Land, TX MSA	32	6	FL	64	5	College Station	14
7	Los Angeles-Long Beach-Anaheim, CA MSA	29	7	PA	62	7	Fairfax	13
8	Minneapolis-St. Paul-Bloomington, MN-WI MSA	21	8	MI	59	7	Minneapolis	13
8	St. Louis, MO-IL MSA	21	9	VA	46	9	College Park	12
10	Atlanta-Sandy Springs-Roswell, GA MSA	20	10	NC	41	9	Orlando	12
11	Boston-Cambridge-Newton, MA-NH MSA	19	11	MN	35	9	Portland (OR)	12
12	Portland-Vancouver-Hillsboro, OR-WA MSA	17	12	MO	34	9	San Diego	12
13	Dallas-Fort Worth-Arlington, TX MSA	16	13	GA	33	13	Bowling Green	11
13	Detroit-Warren-Dearborn, MI MSA	16	13	IN	33	13	Philadelphia	11
15	Miami-Fort Lauderdale-West Palm Beach, FL MSA	15	13	NJ	33	15	Athens (GA)	10
15	Orlando-Kissimmee-Sanford, FL MSA	15	16	TN	32	16	Champaign	9
15	San Diego-Carlsbad, CA MSA	15	17	MA	26	16	West Lafayette (IN)	9
15	Cleveland-Elyria, OH MSA	15	17	MD	26	18	Columbus (OH)	8
19	Dayton, OH MSA	12	19	CT	25	18	Ithaca	8
19	Hartford-West Hartford-East Hartford, CT MSA	12	20	WI	24	18	Melbourne	8
19	Akron, OH MSA	12				18	Murfreesboro	8
						18	Norman	8
						18	Pittsburgh	8
						18	St. Louis	8

* Based on 2011 SIOP professional membership, only top 20 ranked locations are included.

** When NY/NJ/PA MSA is combined with lower CT MSA, the # of members goes to 69.

As might be expected a very large number of academic members are located in nonmetropolitan areas: small college and university towns. As expected the larger MSAs have more academic members—New York, Chicago, Philadelphia, and Houston—than smaller MSAs. However there are concentrations of academic members in some mid sized MSAs, such as Minneapolis (MSA $n = 21$), St. Louis (MSA $n = 21$), Portland (MSA $n = 17$), Detroit (MSA $n = 16$), Cleveland (MSA $n = 15$), and Orlando (MSA $n = 15$). Some notable MSAs with fewer academic members include Phoenix (MSA $n = 6$), San Jose (MSA $n = 4$), Denver (MSA $n = 6$), Baltimore (MSA (7), and New Orleans (MSA $n = 7$).

As we would expect, larger states have more academic members than smaller states. The state rankings are not as heavily dominated by Midwest states as they might have been in the past. More southern states are now in the top-20 states, such as Florida (MSA $n = 64$), Virginia (MSA $n = 46$), North Carolina (MSA $n = 41$), and Georgia (MSA $n = 33$).

The city rankings seem to reflect specific well known universities and colleges such as East Lansing, MI; Athens, GA; College Park, MD; and College Station, PA.

Researcher Members

SIOP members who work in research consulting firms and government research positions are included in the researcher employment category. Figure 5 represents the locations of these members on a U.S. map.
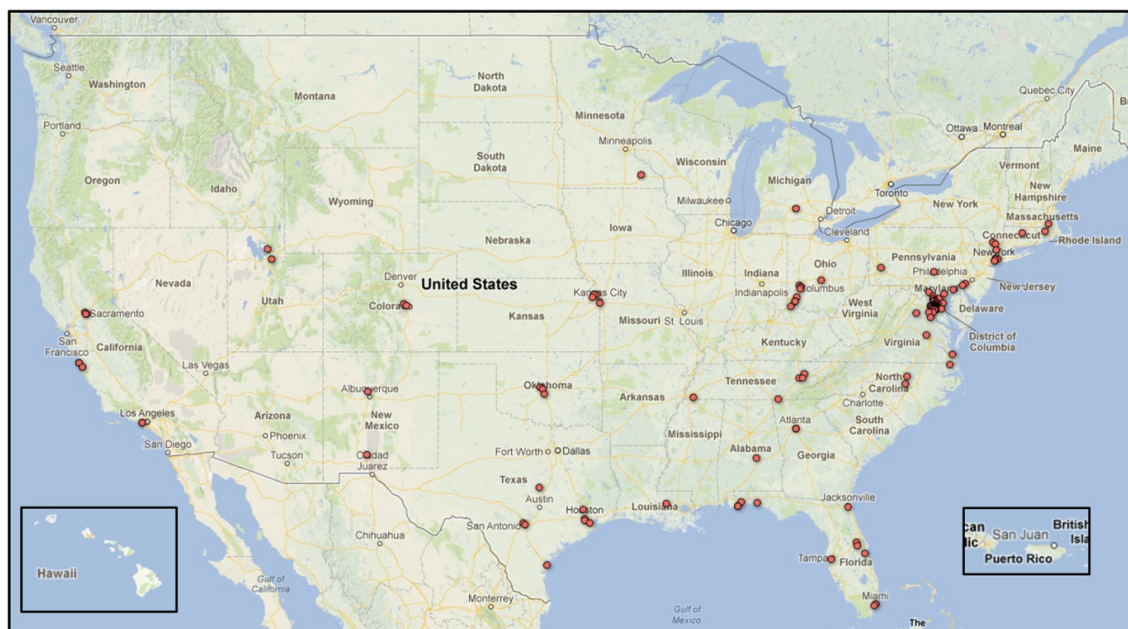
Based on the 2011 SIOP professional membership.

Figure 5. Location of all full SIOP members employed as researchers in the United States.

There are far fewer members in this employment category than the other categories, and they are typically located in government facilities or in the offices of research firms, such as in the Washington DC area. Table 5 provides the rank orders of the Metropolitan Statistical Areas, states, and cities where at least two researcher members are located.

Table 5
Rank Orders of the Geographic Employment Locations of Full SIOP Members Employed as Researchers in the US

Geographic Areas of SIOP Researchers Employed in the United States*							
Rank	Metropolitan Statistical Area (MSA)	# of Members	Rank	State	# of Members	Rank	City	# of Members
1	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	69	1	VA	52	1	Arlington (VA)	15
2	Non-Metropolitan	19	2	MD	19	2	Alexandria (VA)	12
3	New York-Newark-Jersey City, NY-NJ-PA MSA	5	3	FL	11	3	Falls Church	5
4	Houston-The Woodlands-Sugar Land, TX MSA	4	4	TX	8	4	Washington (DC)	4
4	Baltimore-Columbia-Towson, MD MSA	4	4	CA	8	4	Annandale	4
4	Kansas City, MO-KS MSA	4	4	OH	8	6	New York	3
4	Cincinnati, OH-KY-IN MSA	4	7	NY	7	6	Houston	3
4	Dayton, OH MSA	4	8	TN	5	6	Cincinnati	3
9	Sacramento–Roseville–Arden-Arcade, CA MSA	3	9	DC	4	6	Rockville (MD)	3
9	Knoxville, TN MSA	3	9	OK	4	6	Sacramento	3
9	Oklahoma City, OK MSA	3	11	NC	3	6	Knoxville	3
12	Atlanta-Sandy Springs-Roswell, GA MSA	2	11	KS	3	6	Silver Spring (MD)	3
12	Los Angeles-Long Beach-Anaheim, CA MSA	2	13	GA	2	6	Dayton	3
12	Miami-Fort Lauderdale-West Palm Beach, FL MSA	2	13	PA	2	6	Pensacola	3
12	Orlando-Kissimmee-Sanford, FL MSA	2	13	CO	2	15	Atlanta	2
12	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	2	13	NM	2	15	San Antonio	2
12	Colorado Springs, CO MSA	2	13	UT	2	15	Bethesda	2
12	Raleigh, NC MSA	2	13	DE	2	15	Fairfax	2
12	San Antonio-New Braunfels, TX MSA	2	13	AE	2	15	Vienna (VA)	2
						15	Monterey	2
						15	Montgomery Village (MD)	2
						15	Wilmington	2
						15	Santa Monica	2
						15	APO AE (Armed Forces Europe, Middle East)	2
						15	Oklahoma City	2

*Based on 2011 SIOP professional membership, only geographic areas with at least two researchers were included.

As might be expected a sizable group of researchers are located in the Washington DC area (MSA n = 69) because for many of them their primary clients are in the federal government. The rest are dispersed across the U.S. Their concentration in the Washington DC area is also reflected in the state and city rankings.

Conclusions

Based on this data there are a few evident conclusions:

- Most SIOP members are located in the Eastern half of the US, with particular concentrations along the Northeast Corridor, in the New York MSA and Washington DC MSA, and in some larger cities
- Some moderate sized MSAs have substantial numbers of members, including Minneapolis, Pittsburgh, St. Louis, and Seattle.
- Generally larger states have more members; Florida and Georgia also rank high on the number of SIOP members in each state.
- Some large states and MSAs have a relatively small number of SIOP members.
- In addition to the New York MSA and the Washington DC MSA, there are substantial numbers of I-O consultants located in the Atlanta MSA, Minneapolis MSA, and the Chicago MSA.
- Members in organizations are concentrated in the New York MSA and larger states with numerous corporate headquarters.
- Academic members are primarily located in nonmetropolitan areas, probably in smaller university towns.
- Researchers are heavily concentrated in the Washington DC MSA, probably because many of their federal government clients are located there.

So how can this information be used?

- SIOP can use this information to make wiser decisions about where to hold annual conferences and LECs in order to go where SIOP members are located.
- SIOP can make critical decisions on initiatives, services, and funding in order to better serve the most members where they are located. One example is to focus licensing efforts on those states and MSAs with greater numbers of consultants and members in organizations.
- SIOP Executive Board can better monitor member trends in geographic locations and see the membership across the entire U.S. and not just favor traditional geographic locations or personal geographic preferences and whims.
- Members can see the number of like-minded I-O psychology professionals in their geographic area and then work to build and leverage a local professional network.
- Members can see what geographic areas may be underserved and look for business opportunities in those areas.
- Members and graduate students can find geographic areas with many SIOP members, which may offer the most promising job opportunities.

We recommend that SIOP complete this geographic analysis every 5 to 10 years in order to monitor changes in member locations and to provide better services to all SIOP members.

Reference

Silzer, R. F. & Parson, C. (October, 2011). SIOP membership and representation. *The Industrial–Organizational Psychologist, 49*(3), 85-96.

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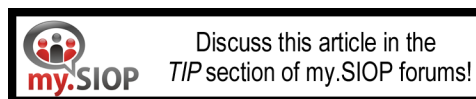
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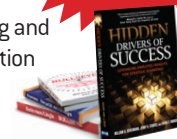
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The Top Ten Things We Wished We Knew Before Graduate School

The University of Akron TIP-TOPics Team

When we began this column 2 years ago, we were first, second, and third year students, uncertain about how our futures would unfold as we marched onwards through graduate school and into the "real world." Now, here we are writing our final column! We have learned much in the past 2 years. During that time, many of us gained valuable experience working as interns at local and national corporations. Others experienced the rewards that come from teaching others about the wonders of psychology. And for all of us there have been momentous experiences that occurred both in our academic lives and outside of them. These experiences range from passing comprehensive exams to defending dissertations, and from engagements to be married to the birth of a child. As we pass on the **TIP-TOPics** torch, we find ourselves thinking back to the very beginning of our graduate school journey. We pondered what we *wished we had known* when we started as graduate students at The University of Akron and decided for this last **TIP-TOPics** column to each leave the reader with a piece of our best advice, as well as to provide a glimpse of what lies in store for each of us in the years ahead.

1. Begin preparing for comprehensive exams *very* early.

"Although comprehensive exams vary from school to school in structure and content, my understanding is that they are something of a harrowing experience everywhere. The other thing they have in common is that the earlier you start preparing, the better. I didn't find out why 'comps' was a scary word until about halfway through my first year; it would've been nice to avoid going back and reorganizing all my class materials to fit into the study system I subsequently designed." **Alison Carr** *(Alison is wrapping up her PhD and an internship with a Fortune 500 company; she is hopeful her next adventure will be launching a career in external consulting.)*

2. Preserve your experiences.

"I wish I knew that time zips by in graduate school. You are a prospective student in one moment, and in the next, you are nearing the end of the road to graduating. Finding ways to preserve these cherished moments is well worth the effort." **Jessica Dinh** *(Jessica is entering her fifth year in the PhD program and hopes to enter academia and conduct research in areas that include ethical leadership, decision making, and moral information processing.)*

3. Stay well rounded.

"I wish I knew to keep my interests and involvements more broad throughout graduate school to stay well rounded, develop a deeper knowledge of the field, and to keep options open for various research or applied opportunities. It is important to try your hand at multiple aspects of the field during graduate school. You may be surprised at all that interests you." **Noelle Frantz** *(Noelle is entering her fourth year of the PhD program and plans to be an internal I-O specialist when she graduates.)*

4. Saying "no" can be a good thing.

"In the excitement of wanting to 'dive right in,' it can be easy to overextend yourself and say yes to multiple projects (even if they are far outside your area). I wish I had known it was OK to say no to projects that did not resonate with who I was becoming as a researcher. Now, I'm careful to think about how projects fit into my program of work before saying 'sign me up!'" **Allison Gabriel** *(Allison graduated with her PhD in May 2013 and will be joining the School of Business at Virginia Commonwealth University in Richmond, VA, as an assistant professor of Management in August 2013.)*

5. Sometimes you should take the night off.

"There will be times when you feel behind or as if you should be doing something to get ahead. However, when you are exhausted, it can be healthy to leave everything at school for the evening. Not only will you be spared the guilt of untouched work, but you will also have more energy to handle tomorrow's challenges." **Mary Margaret Harris** *(Mary Margaret is finishing her dissertation and looking forward to a career in talent assessment and development.)*

6. Get involved in research right away.

"When you first start graduate school, you may find yourself getting used to the workload and your new respon-

sibilities, and may postpone your potential research agenda. However during your initial acclimation to graduate school, you can investigate research possibilities and collaborate with more senior students in your program. These opportunities allow you to learn from your peers while participating in meaningful research." **Stephen Hill** *(Stephen successfully defended his dissertation in May 2013 and plans to pursue a career in academia researching career development, retirement, and issues related to law enforcement officers.)*

7. Walk in the footsteps of others.

"My single biggest misconception in undergrad was that I had to commit to a future before I even started graduate school. I wrongly believed that I had to choose a single pair of shoes to walk in (e.g., academic versus applied, a specific research area) and then get the maximum amount of mileage out of them prior to graduating. This does work well for some, but daring to try on novel roles and research areas can be equally fulfilling. In addition to discovering some genuinely surprising 'fits,' I have gained tremendous respect for the various types of shoes people fill in our field." **Ernest Hoffman** *(Ernest is entering his fourth year in the PhD program and hopes to pursue a career in academia.)*

8. Stay social.

"Graduate school is demanding, but it doesn't have to negatively impact your social life. There are lots of great opportunities to get engaged in your community and interest groups. Join a book club, young professionals organization, gym, volunteer group, or anything where you can interact with individuals outside of graduate school. Doing so can help you de-stress and explore additional opportunities to foster interests and collaborate." **Aimee King** *(Aimee will be graduating with her PhD in August 2013 and pursuing a career in medical education and training at University of Texas–Southwestern.)*

9. Don't be afraid to learn.

"It is important to be oriented towards constantly learning and developing. If you don't know something, don't be scared: Learn. If you can embrace learning new things, seeking new perspectives, and being adaptable, you will achieve success." **Aaron Kraus** *(Aaron is entering his fourth year in the PhD program and plans to pursue an applied position at a management consulting firm after finishing his dissertation on generational differences and innovation.)*

10. Take the advice that works for *you*.

"There will be many people who will graciously give you advice, tips, and suggestions as you go through grad school, and these are always great resources to have. But, at the end of the day everyone's experiences are unique. Find out what your own strengths and weaknesses are and use this time to figure out what works best to help you be successful." **Chantale Wilson** *(Chantale is entering her fourth year in the PhD program and hopes to obtain a research or consulting position with the government or public sector researching cross-cultural topics, performance management, and simulation/game-based training.)*

Bonus Tip: Be flexible!

This column enters a new era as a new set of authors takes over, and *TIP* is entering a new era as well. With new leadership and a new online format, *TIP* will continue to evolve and grow over the years to come. We all agree that being flexible and adapting to change is key to success in graduate school. Assignments will arise when least expected and projects may not always go as planned. But, by keeping a positive attitude and finding the support of your peers and colleagues, we promise that each day will be better than the one before. We are eager to see *TIP* evolve into a strong online community for scientists and practitioners alike, and we wish the new editorial board and **TIP-TOPics** team much success with the journal!

With that said, we are signing off from the Midwest. Thank you to everyone for taking this 2-year journey with our team, and we will see you at the next SIOP in Hawaii!

TIP-TOPics Call for Graduate Student Columnist(s)

TIP-TOPics is a graduate student editorial column published in *The Industrial-Organizational Psychologist (TIP)* on a quarterly basis. The column provides information and advice relevant to SIOP's student membership and has historically been very popular.

The editorial columnist(s) can be an individual or group, and the groups may be made up of students from the same school or different schools; however, you must be current Student Affiliates of SIOP in good standing. The **TIP-TOPics** columnist(s) will have a 2-year tenure beginning with the October 2013 issue and ending with the July 2015 issue. Columnists must be graduate students throughout this time period, thus all prospective columnists should be at least 2 years from graduation. Columns are approximately 2,000 words, due four times a year (August 15, November 15, February 15, and May 15), and written according to APA guidelines.

Submission Information

Statement of interest and one letter of recommendation (from a faculty member who is familiar with the work of the potential columnist/s) should be sent via e-mail to **Morrie Mullins (**mullins@xavier.edu**)** by **July 11, 2013**. The statement of interest should at a minimum address the following: (a) all potential columnist names and school affiliation and (b) how you will approach the content, style, and structure of the column, including a few potential column topics.

Discuss this article in the *TIP* section of my.SIOP forums!
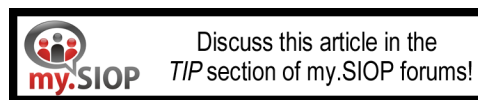
SIOP Awards and Grants deadline is June 30

Nominate or apply today at
http://www.siop.org/awardsonline/main.aspx

SIOP FOUNDATION

I-Os and Funded Research

Ashley Walvoord
Verizon Wireless

Liu-Qin Yang
Portland State University

"Significant."

This was the remark of a fellow I-O colleague at this year's SIOP Annual Conference in Houston, as he offered his interpretation of the last three issues of **Yes You Can**. He was summarizing the extent of opportunity for I-Os to obtain research funding, as exhibited by the success stories from our field. From the "big picture" shared by **Steve Kozlowski**, to **Lillian Eby's** federal grant examples and the variety of military funding priorities described by **Eduardo Salas**, the opportunity for I-Os is indeed showing itself to be significant.

But what if you are looking for a different type of funding structure, perhaps more specialized topics or more moderate in scope? Foundation grants and funding may offer a good match. To bring several examples to life, we invited **Donald Truxillo, Autumn Krauss,** and **Talya Bauer** to share their experiences with foundation funding and I-O research topics. Among Dr. Truxillo's (Portland State University) research interests are applicant reactions, the aging workforce, and employee safety. Dr. Krauss is chief scientist at Sentis, an occupational health and safety consultancy based in Australia, and her research examines talent management and occupational health issues. Talya Bauer (Portland State University) researches relationships at work throughout the employee life cycle (e.g., initial employment interactions such as recruitment and selection, new employee socialization, and key organizational relationships such as those with leaders and peers). In addition, joining us with the inside scoop at the Society for Human Resource Management (SHRM) Foundation are Beth McFarland (Certified Association Executive; Director of Programs over Foundation publications, research, scholarships, and thought leadership initiatives) and **Lynn McFarland** (Research Coordinator).

Donald, Autumn, and Talya, "foundation funding" is a rather broad category, let's start with some examples of the research funding you have obtained for I-O topics from specialized organizations.
Talya (PSU): Well, first Donald and I received two SHRM grants in the mid-2000s about using interactive voice response technology in hiring and how job applicants perceived this hiring process. These allowed us to apply a research interest (applicant reactions) to what was then a new technology (IVR). It was great to get this funding because it really helped us to move the project forward and to get two papers and several presentations from the series of studies we conducted.
Donald (PSU): Later, we teamed up with Autumn and applied for a SIOP Small Grant Award in 2010 for the development of an explanation typology and examination of the effects of explanations on applicant attitudes and behaviors. We used this seed money to fund a Study 1 and then built upon this research for a larger proposal to the SHRM Foundation. (SHRM's call for proposals was quite broad; i.e., a range of HR topics would be of interest.) We subsequently received a SHRM Foundation grant to examine how to provide explanations to job applicants in the hiring process in an online application environment. So, we initially received a SIOP Foundation grant to get us started and develop the materials, and the SHRM grant allowed us to do the full-blown study, which is ongoing. The strength of this grant was that it examined whether an intervention (providing explanations to applicants) that has a good theoretical foundation and is effective in practice could be scaled to benefit a large pool of online applicants. Another strength is that it allowed us to bring our expertise in practice and in research to bear on the issue.

That sequencing of studies and funding is a great strategy! How did you identify the opportunities that could accomplish the foundation's objectives as well as your own research objectives/interests?

Autumn (Sentis): It was a bit of an "organic" relationship to begin with, in that the three of us had known each other for several years and PSU had been placing interns with my employer at the time. Talya and Donald were talking with me about their research when we realized that we could put together a study that would be useful to employers and could advance science. One thing to take away from this is that we had already established this partnership so that when we recognized the opportunity we were able to move forward with it relatively quickly.

Talya (PSU): There were a number of sessions at the recent 2013 SIOP conference on science–practice partnerships and the persistence, patience, and collegiality all parties need to pull these off. It's important to have these relationships developed, even in small ways (e.g., grad student placement, small studies, consulting) so that you know you can work together, identify good research collaborations, and make sure your styles, goals, and values match. For example, if you are an academic who wants to partner with a practitioner in funded research, you might want to "start small" and work with the practitioner on a less ambitious project or collaboration first so you can establish a strong foundation first.

Donald (PSU): As far as understanding whether your research project matches the interests of the funding agency, be sure to examine previously funded projects if available. And there is nothing like the personal touch. Talk to the program officer, and talk to people who have experience with that agency or foundation.

On that note, Beth and Lynn, how does SHRM Foundation structure or prioritize topics for funding opportunities?

Beth (SHRM Foundation): We have two funding cycles each year during in which researchers may submit proposals on any HR-related topic. The submission deadlines are April 1 and October 1. In addition, we occasionally request proposals on specific topics. For instance, we recently sent out a call for proposals on social media use in HR. The SHRM Foundation funds high impact HR research aimed at an academic audience while also having direct actionable implications for HR practice, whether the focus is on addressing current challenges or understanding emerging trends. Any topic will be considered, however the grant must be for original rigorous empirical academic research that advances the HR profession.

Once you think you have a "match" with a foundation's interests, articulating that match in the research proposal seems critical. Do you have any suggestions for readers who would be new to writing proposals for foundation funding opportunities?

Donald (PSU): It's important to consider who will be reviewing the proposal, to use their language and frame of reference. What is it that they want? Be sure to talk to your program officer and to others who have submitted to the foundation. When it comes to grants, the likelihood of completion and impact are almost always front and center, so speaking directly to those points is a key to success.

Autumn (Sentis): Sometimes a call for grant proposals may have research topics identified as particularly desirable by the foundation based on its current focus or interest; your chances of success are increased if your study can speak directly to one or more of these topics. You might also be able to contact the foundation and discuss your study ideas prior to submission, as this initial feedback is helpful to tailor your proposal.

How does SHRM Foundation structure the review process to evaluate the "match" of proposals to the priorities and standards of SHRM Foundation?

Lynn (SHRM Foundation): Researchers are instructed to submit two versions of their final proposal—one complete version and one "blind' version"—via an online form. The foundation uses the blind version, which does not identify researcher names or universities, to conduct an initial "blind review" of the proposals. This minimizes any unintentional reviewer bias and allows the reviewers to focus solely on the research design, methodology, and potential impact of the study. Submitted proposals are reviewed by groups of volunteers including both academics and HR practitioners. The entire application process is conducted online. No hard copies are required. On average, approximately 15% of proposals receive funding.

Let's talk money and planning. In your experience, do budgets for foundation grants differ substantially

from other funding sources or mechanisms?

Talya (PSU): Yes! In our experience, the budgets for nonfederally funded grants are much more straightforward and less bureaucratically complex. That doesn't mean you don't need to follow their guidelines carefully. If you have a question, ask the program officer. It is also common during the foundation granting process for the foundation to come back with an approved reduced budget and ask you to make associated changes to your project scope.

When you reflect on any experiences you may have had with unfunded proposals for foundation opportunities, what stands out?

Talya and Donald (PSU): The amount of feedback really varies considerably from foundation to foundation. For instance, we recently submitted a letter of intent to another foundation that was rejected because they had over 200 applications for four grants. We were disappointed but were glad that they saved us the trouble of continuing further. But other reasons include that it wasn't a direct hit on what the reviewers were looking for in that particular call. Again, a program officer can help you to find out whether you can address the limitations and whether it is appropriate to resubmit.

Lynn (SHRM Foundation): It is important that grant proposals be grounded in the HR literature, built on a solid theoretical basis, based on sound methodology, and have clear implications for both research and practice. Proposals not meeting one of those criteria are not funded. The most common feature missing from proposals is a clear discussion of the practical implications of results. Oftentimes the stated practical implications are too indirect and the study results are not likely to offer HR professionals actionable advice.

Do you have any tips for success to provide for your peers who are interested in trying to pursue research funding for the first time?

Autumn (Sentis): Yes, choose people with whom you can work well, individuals who you feel are trustworthy and with whom you can communicate well. This is just good advice for colleagues of any sort but especially when the "deliverable" nature of the grant process means it's challenging to "walk away" from a project.

Donald (PSU): Also, do what you say you'll do, follow through, and do it on time. And be aware that all parties are dealing with organizational constraints on their end. Just like most relationships, effective communication is critical.

Talya (PSU): With foundations, it may be that an institution with relatively little knowledge of I-O psychology is funding your project for the benefit of its members, customers, or industry. This is an excellent opportunity to increase the visibility of I-O psychology; as a field, we want to use this opportunity wisely by demonstrating both the strong scientific underpinnings and practical relevance of our work.

Beth (SHRM Foundation): We encourage potential grant applicants to watch a recorded webinar on Preparing a Successful SHRM Foundation Grant Application available on the SHRM Foundation website. This provides additional tips on preparing a strong proposal. Researchers may also review abstracts and final reports from all the proposals the SHRM Foundation has funded since 2005. When you look at our funded projects, we have had considerable success. More than 80% of the research funded by the SHRM Foundation has been presented at national or international conferences and published in top journals such as the *Journal of Applied Psychology, Academy of Management Journal,* and the *Journal of Management*. How is that for motivation to apply!

A Look Ahead to the Next Yes You Can: I-Os and Funded Research

Thank you to Donald, Talya, Autumn, Beth, and Lynn for sharing their reflections and experiences with foundation-based funding opportunities! In the next issue, we will examine the opportunities for research funding through the lens of the early-career I-O. Come back to learn how two of your colleagues balanced their early career priorities, leveraged support, and successfully landed funding for I-O topics!

"*Significant*" opportunity for I-O research funding is right. Which of the many funding mechanisms is appealing to you? Give it some thought, check out the foundation funding resources below, and until next time, remember: **Yes <u>You</u> Can!**

Example Foundation Grant Resources
www.shrmfoundation.org (all resources are under "Research Grants")
http://fs16.formsite.com/SHRMFdn/form6/index.html (letter of intent/inquiry)
http://www.shrm.org/about/foundation/research/Pages/GrantsAwarded.aspx
http://www.siop.org/foundation/information.aspx
http://www.siop.org/grants.aspx

Note: The conversation with Beth McFarland and Lynn McFarland continues at www.siop.org/TIP/July2013/conversation.pdf
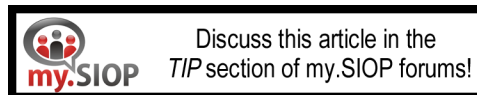
Discuss this article in the *TIP* section of my.SIOP forums!

Made in America: Another Small Way to Celebrate Work

Michael J. Zickar
Bowling Green State University
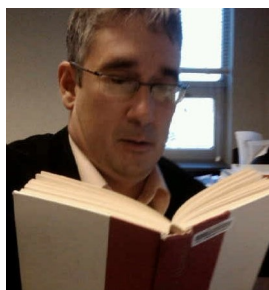
From my experience, most industrial-organizational psychologists are not particularly passionate about the topic that is the focus of their career: *work*. When I read personal statements of prospective graduate students, I often read humanistic statements about why they are choosing to pursue doctoral studies in a field that studies the working world. They mention bad experiences that their parents or grandparents or even they had while working and how as I-O psychologists they would like to create a better workplace. But something usually happens during the 4 or 5 years that we have a student for doctoral studies, and by the time they graduate, students become obsessed with the technical side of the field (methodology, experimental design, consultant delivery) and seem to forget that the topic that they are studying has the potential to meaningfully impact the lives of workers. I think it is important for I-O psychologists to have a real passion for the world of work; this passion can make our research more meaningful for a broader population. In addition, this passion can help sustain us during the inevitable ups and downs of our individual careers.

This lack of celebrating work is, however, a part of our great culture, which has lost respect for pride for a job well done, especially for people who work low-wage or entry-level jobs. I have several friends who work in the building trades (e.g., electricians, plumbers, boilermakers), and they lament that, even though the starting salaries for their fields are reasonably high, they have a hard time attracting talent because kids graduating from high school feel like they need to go to college so that they can become the next CEO.

There are lots of ways to cultivate your passion for work. One of my mentors, **Chuck Hulin**, urged his students to actually do the job that they were going to analyze in their research studies. This is important because many of us in the field have had limited work experiences, going straight from undergraduate school to graduate school to the working world. My summer jobs at Little Caesars Pizza and the University of Illinois cafeteria gave me a limited perspective on working! Although it may be impractical for us to attain more extensive working experiences, there are other ways to develop a passion for work. You can read histories of work (especially the industry that on which you are collecting data) and you can conduct interviews of people who have diverse working experiences, letting them tell their work stories using their language instead of filtering their experiences through a predetermined set of items (see Zickar & Carter, 2010).

Another way of cultivating a passion for the subject of work is collecting items relating to work. A few years ago, I compiled a list of work-related movies (Zickar, 2007) and later a list of songs (my favorite is *They're Tearing the Labor Camps Down* by Merle Haggard). It is possible to collect work-related memorabilia too. Perusing eBay, there are a variety of work-related objects including coal mining companies' scrip (e.g., company money), postcards of factories, union lapel pins, and autographs of corporate and labor leaders. There are all kinds of directions that such hobbies could take (e-mail me if you have a work-related collection as I would love to hear about it!).

This August, the United States Postal Service (USPS) is planning on release a set of Forever stamps commemorating the American worker with a series of 12 stamps, each which includes a beautiful black-and-white image, each an iconic photograph showing a variety of types of work. Most seem to be from the 1920s through the 1930s. There are images of ironworkers building the Empire State Building, a seamstress, a railworker, and a millinery worker among others.

Surprisingly, there have been very few stamps honoring the workplace. There has been a stamp honoring Rosie the Riveter celebrating the role of women in the workplace during WWII as well as a stamp celebrating the childhood labor legislation that was passed in the early part of the 20th century. There have been stamps honoring labor and industry leaders (e.g., Gompers, Meany, Carnegie) as well as individual industries (e.g., the Steel Industry and for some reason the Poultry Industry), but these are rare compared to images of flags, flowers, animals, and lighthouses (nothing against any of those!). Topics related to work are not the only underrepresented subjects for stamps. Histo-

rian Ludy Benjamin Jr. pointed out that there had not been stamp honoring psychology; at the time, a group of psychologists were advocating for a stamp honoring William James (Benajmin, 2003). There was a stamp honoring Professional Management (and Joseph Whorton) so colleagues in business schools can feel honored. In addition, Lillian Gilbreth has had her own stamp; she received a PhD in psychology, though she is more well-known as an industrial engineer.

On August 8th (subject to change), the United States Postal Service will issue sheets of the 12-stamp series Made in America, Building a Nation. They will cost the same as any other first-class stamp. I recommend that you buy as many sheets as you can. Because they are Forever stamps, they can be used for first-class postage even if prices rise (as they will). Use them to pay your bills, to mail birthday cards, and to surprise old friends with a long-deserved letter. And each time that you stick one of these beautiful stamps onto an envelope, use that as a way to remember that we, as I-O psychologists, are not just correlating scales and connecting paths and arrows in our structural equations models but that our work can and should have direct impact on the lives of the people we are studying.

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The SIOP Living History Series: An Interview With David P. Campbell

Kevin T. Mahoney
South Dakota State University

Jeff Cucina
U.S. Customs and Border Protection

The SIOP Living History Series, a continuing series of interviews of historic I-O figures conducted by the SIOP History Committee, was launched at the 2013 Conference. This year, **David P. Campbell** was interviewed by current SIOP Historian, Kevin T. Mahoney. Dr. Campbell is Smith Richardson Senior Fellow Emeritus at the Center for Creative Leadership and is well known for his contributions in vocational psychology and leadership development. Dr. Campbell is a recipient of the Distinguished Professional Contributions Award, the E.K. Strong, Jr. Award for Excellence in Psychological Research, and is a SIOP Fellow. He is author of 53 peer-reviewed publications, and three books for nonpsychologist audiences, one of which, *If You Don't Know Where You're Going, You'll Probably End Up Somewhere Else* (1974, 2007) has sold more than 600,000 copies. During the interview, Dr. Campbell talked about being the final research assistant for Donald G. Paterson, and the many ways Dr. Paterson had a positive influence on I-O psychology. Given Paterson was involved in the World War I Army Alpha program, Dr. Campbell noted that his career combined with Paterson's spans the entire history of psychological testing. Dr. Campbell discussed starting his career as a University of Minnesota professor and demonstrated how he trained graduate students to write with clarity. He then discussed his long association with the Strong-Campbell Interest Inventory, including the controversy he faced when there was a blue-colored form of the Strong-Campbell for men and a pink-colored form for women. Dr. Campbell shared insights about vocational interests and test construction he learned throughout his career. Dr. Campbell then looked back on nearly 4 decades working with the Center for Creative Leadership, offered his perspective on global leadership, and reflected on his experiences with leadership development.

Thanks to Jeff Cucina for his invaluable help in interview preparation.

The videos of the interview, linked below, were recorded by Bob Muschewske.

http://www.youtube.com/watch?v=ZbUPLL8o9zc

Announcing the Jeanneret Symposium

Milton D. Hakel
SIOP Foundation President

I am delighted to tell you that Dick Jeanneret has provided another significant gift to I-O psychology, one that will create an event : the Jeanneret Symposium. The Jeanneret Symposium will be held sometime in 2014, and it well may provide a turning point for applied research and development in our field. The symposium idea grew out of conversations that Dick and I had earlier this year, and the story behind this announcement provides an illustration of how the SIOP Foundation can work with potential benefactors to build for the future of I-O.

The story starts with a phone call, one in which Dick asked about what opportunities the Foundation Trustees saw for advancing the field in coming years. Having just endowed the Jeanneret Award for Excellence in the Study of Individual or Group Assessment a year earlier, he was looking to initiate and contribute to something different, and in several subsequent conversations the idea for the symposium came into focus.

Reflections on I-O

We began by reflecting on the development of I-O research and development over the span of our careers. It is not news that there is a substantial gap in our field between the frontiers of research and the front lines of application. Academicians carry on in an ecology that places primary value on publication in peer-reviewed journals, while practitioners lament the unavailability of research relevant to resolving immediate, tangible problems. I-O psychology journals and conference discussions are filled with unanswered questions ("further research is needed…."), but only a small proportion of these questions ever receive subsequent attention.

Asking the right questions is one key to success in any field. Within I-O psychology over its past century, the discipline has been content for the most part to let individual researchers and the occasional group leader set the research agenda. We noted that this laissez-faire approach has been and continues to be quite successful; however, it may be possible to improve upon it by systematizing some steps in delineating and prioritizing the right focal questions.

We identified collaboration as another key to success in any field. Over the decades in I-O psychology, there have been several notable field research consortia, that is, collectives of individuals and groups that combine their resources and efforts to address focal problems or issues. Some exemplars include: The U.S. Army Research Institute's Project A, studies of work analysis methodologies including the Position Analysis Questionnaire (sponsored by the Office of Naval Research) and O*NET (sponsored be the Department of Labor), SIOP's Technical Assistance Program to the National Association of Secondary School Principals, and Division 14's Methodology Conference cosponsored with the Center for Creative Leadership. Other large-scale collaborations include the GLOBE project on leadership, the R&D done by LIAMA/LIMRA over the decades, and even the Ohio State Leadership Studies. Outside of I-O, the Gordon Research Conferences organized by AAAS and the study committees of the National Research Council serve as worthy models. Common to these efforts is a well-defined and articulated organizational or institutional need, close collaboration among a small group of leading scholars, and determination to advance the impact of practice.

With "asking the right questions" and "field research consortium" identified as key concepts, the idea for a symposium began to materialize. I started drafting the memorandum of understanding (MOU) between Dick and the Foundation. In conversation we had lamented the fact that there is no simple English word for "scientist–practitioner," but as I wrote I realized that there is an old Greek one.

Praxis

In Ancient Greek the word praxis (πραξις) referred to activity engaged in by those who are free. Aristotle identified three types of knowledge: theoretical (theoria), for which the end goal is truth; poietical (poiesis), for which the end goal is production; and practical (praxis), for which the end goal is action.

The strategic and organizational usage of the word "praxis" emphasizes the need for a continuing cycle of conceptualizing the meanings of what can be learned from experience in order to reframe strategic and operational models. That cycle forms the core of what organizational psychologists embrace as the "scientist–practitioner model."

The Jeanneret Symposium

The MOU specifies that the Jeanneret Symposium will address two aspects of the praxis cycle in particular: framing a focal question and collaborating to resolve it. The Trustees of the SIOP Foundation will take the lead in organizing and conducting the Jeanneret Symposium as a full test of a prototype process for establishing field research consortia. This will take place in two steps: (1) identify a focal question, and (2) plan and implement a launch event for forming a field research or praxis consortium. To carry them out, the Foundation Trustees will appoint a Steering Committee of subject matter experts from SIOP, other relevant organizations, and the Foundation itself to frame the question that will become the focus of the Jeanneret Symposium and also to plan and conduct the symposium. The Foundation Trustees will also commission an independent formative and summative evaluation.

Step 1: Identify a focal question. What makes a question the "right" one to ask? In hindsight right questions are easy to see, but in prospect the best path or paths forward are not so easy to spot. For organizational psychologists, action/application is the ultimate end goal, so focusing on questions that are likely to have big potential impacts on application should be preferred to others. Timeliness in finding answers is an additional criterion, where preference should be given to questions that could be resolved within a specified interval, say 5 years (that is to say, the foreseeable future). The Steering Committee may convene in person or meet by electronic means, and it is expected to seek input broadly as it identifies the content area (such as assessment or work analysis) for the symposium and then refines potential focal questions. The Steering Committee will appoint a Practice Panel, consisting of senior scientist–practitioners who are or have been active in application within the general content domain of the symposium, to consider and adopt the focal question for the symposium. The Practice Panel may be interdisciplinary, interorganizational, and international in its membership, and representative of issue or topic stakeholders. Its goal is to devise the succinct statement of a well-defined and articulated organizational or institutional need (i.e., the focal question). The report of the Practice Panel may be published in whole or in part by the Steering Committee.

Step 2: Collaborate to resolve the focal question. The Steering Committee will plan and conduct the Jeanneret Symposium as an event with the specific objective of organizing and chartering a field research consortium to pursue resolution of the focal topic and question identified in step one. The event might be held in conjunction with other events (such as a SIOP Conference or LEC meeting) or on a standalone basis. Principals in the event will be expected to contribute their time, although travel and other out-of-pocket meeting costs could be covered. Any intellectual property resulting from the symposium would be assigned to the public domain, to SIOP, or to the SIOP Foundation as might be consistent with the maintenance of its tax-exempt charitable status. The Steering Committee will adopt these and other ground rules with the intention of assuring close collaboration among participating scholars.

After the close of the Jeanneret Symposium, the independent evaluator will provide a public report to the Foundation Trustees summarizing the lessons learned in this venture about whether and how better to (a) refine focused research questions and (b) foster their collaborative resolution.

I mentioned at the outset that the Jeanneret Symposium might be a turning point for applied research and development in our field. If what we learn from this pilot venture warrants further action, the Foundation Trustees will seek to establish a series of SIOP Praxis Consortia as ongoing initiatives.

What focal questions would you like to see resolved? Interested in serving on the Steering Committee? Email me, at mhakel@bgsu.edu.

Dick's generosity in making the $50,000 contribution to conduct the Jeanneret Symposium is an outstanding leadership example for each of us. Help to encourage excellence and innovation for the future of I-O psychology.

Contribute at http://www.siop.org/foundation/donate.aspx.

Your calls and questions to the SIOP Foundation are welcome. The SIOP Foundation would like to be among your beneficiaries. Join us in building for the future.

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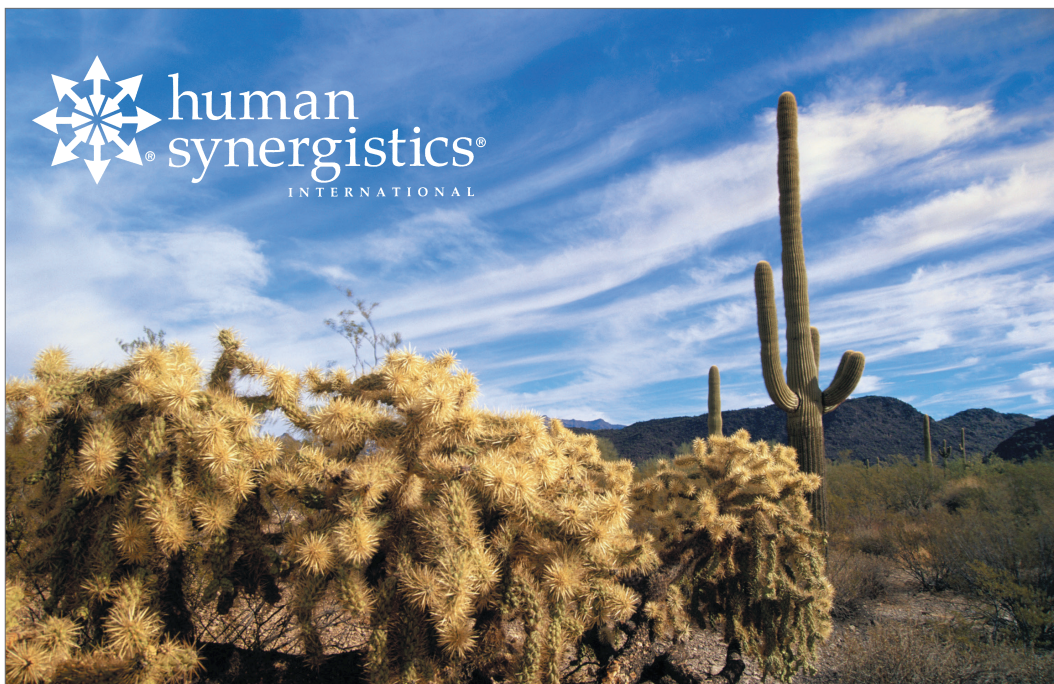419-353-0032 Fax: 419-352-2645
Email: LLentz@siop.org

**José M. Peiró, President of IAAP, Receives the Life Time Award of the
European Association of Work and Organizational Psychology (EAWOP).**

The award was presented during the inaugural ceremony of the 16th Congress of the European Association of Work and Organizational Psychology, held May 22–25, 2013 in Münster, Germany. It is the first time EAWOP awards this distinction that aims to recognize the lifetime contribution to EAWOP and the outstanding services.

Professor David Guest was in charge of presenting the "laudatio" and together with the President of EAWOP, **Prof. Arnold Bakker,** presented the award to José M. Peiró.

Jose M. Peiró is president of IAAP and director of the University research Institute of Human Resources Psychology, Organizational Development and Quality of Work life (IDOCAL) at the University of Valencia. He was former president of EAWOP and Fellow of the Society of Industrial and Organizational Psychology (SIOP) and the European Academy of Occupational Health Psychology (EAOHP; see www.uv.es/jmpeiro).

Houston 2013: SIOP Extends Its Influence

Robin Cohen
Conference Chair, Bank of America

Eden King
Program Chair, George Mason University

The 2013 SIOP conference in Houston was one to remember: SIOP attendees showed Houston that we I-O psychologists can debate workplace science and practice while two-stepping in cowboy hats! We want to take this opportunity to share some of the highlights from the scholarly program as well as the special events that made this conference memorable.

Scholarly Program!

Much of what makes the SIOP conference so spectacular is the quality and diversity of sessions. The program committee—Eden King, **Evan Sinar**, and **Deborah Rupp**—constructed a series of infographics that we think clearly convey the awesomeness that was the SIOP 2013 program.

First, some insights about the key differentiators for submission quality and what characteristics truly catch the eyes of reviewers: Figure 1 shows the adjectives that were most commonly used during the review process to describe highly-rated sessions (larger boxes show more frequent descriptors).

Next, looking across the 2013 SIOP conference, Figure 2 shows the number of sessions by type—an impressively diverse set of presentation formats!
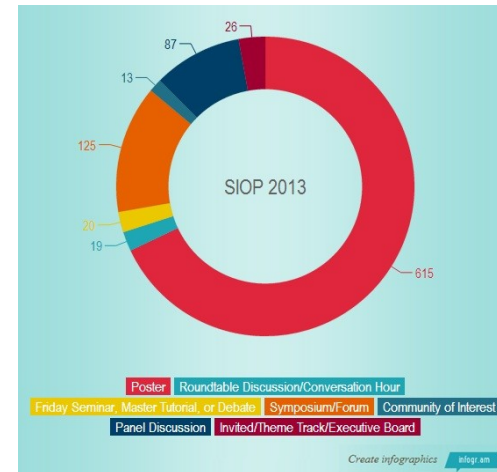
Not only were the session formats diverse, but our presenters also spanned a wide range of affiliations. Figure 3 shows the relative proportion of presenters from each major affiliation group.
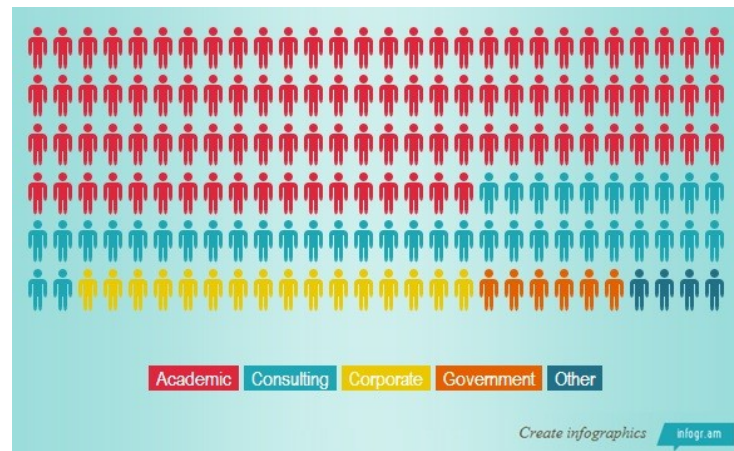
Finally, only a Texas-sized graphic could capture the immense scope of topics covered in this year's conference. Figure 4 shows words from all session titles sized by how often they occurred.

Special Events!

Liberty Munson's Workshop Committee developed and delivered a set of 12 cutting-edge workshops. After the workshops, registrants and presenters were treated to the can't-be-missed workshop reception (shrimp included).

The newly developed Consortia Committee led by **Mark Frame** delivered three consortia that met the needs of multiple SIOP Members and Affiliates. **Liz Boyd** and **Mike Sliter** chaired a fantastic set of sessions for new and untenured faculty members at the 8th Annual Junior Faculty Consortium.

Tracey Rizzuto and **Wendy Bedwell** hosted an outstanding set of sessions for advanced doctoral students nominated from around the world at the Lee Hakel Industrial-Organizational Psychology Doctoral Consortium.

Alison Cooper and **Melanie Coleman** hosted a very stimulating and informative Master's Student Consortium. Now in its seventh year, this consortium continues to provide valuable information and great networking opportunities.

Irene Sasaki organized two incredible tours! The first was a 90-minute boat tour of the Port of Houston Ship Channel, a 25-mile-long complex of diverse public and private facilities. Participants enjoyed passing views of international cargo vessels and port operations. The second tour was the beer lovers' tour of the Saint Arnold Brewing Company facilities. Everyone who attended received a souvenir glass to remember a festive afternoon in Houston!

Eden King and **Mo Wang** (Membership chair) hosted a welcome reception for attendees who were new to the SIOP conference. After a lively introduction to the wonderful events planned for the conference and a few pointers on the nuts and bolts, networking opportunities facilitated meaningful new contacts among new and seasoned members. Many SIOP Ambassadors also attended to meet with their newcomers. In fact, we've heard rave reviews of the ever-growing and ever-improving Ambassadors program, so many thanks to Mo Wang and his committee for coordinating this important service for our newcomers.

Fabian Elizondo, Jeff Foster, and Michael Anderson attend one of the many SIOP Receptions

Opening Plenary

Doug Reynolds

Robin Cohen kicked off the conference by welcoming attendees to the 28th annual conference. She was quite pleased to be looking out from the stage to a very full house! Awards Committee Chair **Leaetta Hough** recognized the award, grant, and scholarship winners, and Fellowship Chair **Jerry Hedge** introduced 23 new SIOP Fellows. Next, our SIOP Foundation president, **Milt Hakel,** provided a report on the SIOP Foundation. President-Elect **Tammy Allen** delighted the group with a funny and warm introduction of our president, **Doug Reynolds,** who then took the stage to discuss his theme of extending our influence. He spoke about opportunities for I-O psychologists to extend our influence, highlighted emerging trends with critical implications for our field, and encouraged us to think about getting more involved in prosocial opportunities that will benefit society at large.

Tammy Allen and Robin Cohen

After the presidential address, Tammy Allen announced the winners of this year's elections: **Milt Hakel** is our new External Affairs Officer, **Laura L. Koppes Bryan** is our new Instructional and Educational Officer, **Cristina Banks** is our new Professional Practice Officer, and **José Cortina** is our new President-Elect. Congratulations to these new SIOP stewards! Robin Cohen closed the plenary session by touting several special features of this year's conference.

Theme Track

Our timely Thursday Theme Track was "Bringing I-O Innovations to Life: Making Our Work Stick," chaired by Evan Sinar. This well-attended theme track featured dynamic speakers and moving storytelling about the ways in which SIOP members can successfully launch and sustain their creative and influential ideas, regardless of their work setting.

Posters

For the seventh year we highlighted the top-rated posters during the Thursday evening all-conference reception. These posters received perfect ratings from all of their reviewers and are outstanding examples of our science and practice!

Placement

Adam Hilliard, Matt O'Connell, and their committee served 342 job seekers and 55 employers at the Placement Center. This year Placement embarked on two new ventures, an early-conference open house and mock interviewing program. Turnout for the open house was tremendous and overwhelmingly successful, with over 30 employers and 200 seekers networking Thursday morning. The interviewing pilot was also quite successful with 40 pilot participants and is an endeavor Placement will expand and enhance in the coming years.

Fun Run

This year, our Frank Landy 5K Fun Run took place on Saturday morning. A beautiful and well-organized course at Rice University made for a lovely morning. Thanks to **Mikki Hebl** and **Paul Sackett** for coordinating this event.

Closing Plenary and Reception

The closing plenary was one for the record books. Father TJ Martinez delivered a passionate and inspiring closing plenary address. Father Martinez leads the Cristo Rey Jesuit High School that helps educate economically disadvantaged children from Houston's Southside. The high school, which opened its doors to students in the fall of 2009, combines a rigorous academic curriculum with an innovative corporate work-study program. All who attended walked away truly inspired and wanting to do more to influence the communities in which we live and work.

Immediately following the closing plenary, the crowd shifted gears and headed over to the Grand Ballroom for the SIOP Four Corners of Texas! Attendees enjoyed delicious food and some intense and entertaining line dancing. The mechanical bull was a big hit too.

We write this article just days after returning from the conference, not nearly recovered from the incredible and exhausting week we spent in Houston. We are thrilled with how it all came together and so thankful to all of you who worked so hard with us on this event and those of you who shared your excitement about it with us. Believe it or not, by the time you

Fr. TJ Martinez

read this, the first 2014 conference planning meeting for Hawaii will have already taken place, and the new team will have the wheels in motion for an exciting 29th annual conference. We welcome Evan Sinar as Program Chair and wish him the best of luck on this exciting endeavor. We are grateful for the opportunity we had to serve the SIOP community. It is not too early to start planning for Hawaii!!! It is going to be a one of a kind, unique SIOP experience. Aloha and see you there!

Closing Reception

Special Thanks

We would like to extend a heartfelt thanks to SIOP Executive Director Dave Nershi and the amazing Administrative Office for all of their hard work in making the conference a huge success!

Bill Byham received the Katzell Award from Foundation President Milt Hakel

Former SIOP Presidents Mike Campion and Gary Latham

Tiffany Poeppelman, Noelle Newhouse, Dave Nershi, and Zack Horn promote my.SIOP

TIP editors and columnists: Past and present

Student volunteers are vital to the SIOP Conference!

Chihuly in the lobby of the Hilton Americas Houston

2013 Frank Landy SIOP 5k Fun Run

Paul Sackett

It was a beautiful morning for the 21st Frank Landy SIOP 5K Fun Run on the Rice University campus in Houston on Saturday, April13. We had a nice turnout of 117 runners, and a good time was had by all. Filip Lievens led the men's division, with Christy Wittrarer winning the women's division. We also had a quite a number of entrants in the in the four-person team competition, with the University of Minnesota (Jack Kostal, Nathan Kuncel, Chelsea Jenson, and Paul Sackett) leading the way. An enormous thank you goes to Mikki Hebl for finding us a great course and other local arrangements in Houston. Join us next May for the 22nd running in Honolulu.

Top 10 Men			Top 10 Women		
Name	Place	Time	Name	Place	Time
Filip Lievens	1	17:57	Christy Wittrarer	1	19:23
Eric Day	2	18:17	Loren Blandon	2	20:00
Scott Whiteford	3	18:33	Deborah Powell	3	20:12
Timothy Clayton	4	18:49	M. K. Ward	4	21:06
Robert McMahen	5	19:04	Bethany Bynum	5	22:28
Fred Macoukji	6	19:32	Chelsea Jenson	6	22:28
Kevin Reindl	7	19:42	Liberty Munson	7	23:31
Jason Randall	8	19:54	Amy Sund	8	23:39
Jack Kostal	9	20:05	Julie Palmer-Schuyler	9	23:50
Klaus Melchers	10	20:29	Erica Barto	10	23:50

Age Group Winners

Women Under 40		Men Under 40	
Christy Wittrarer	19:23	Scott Whiteford	18:33
Loren Blandon	20:00	Timothy Clayton	18:49
Deborah Powell	20:12	Robert McMahen	19:04

Women 40-49		Men 40-49	
Julie Palmer-Schuyler	23:50	Filip Lievens	17:57
Ashlea Troth	25:04	Eric Day	18:17
Shane Connelly	25:19	Kevin Reindl	19:42

Women 50-59		Men 50-59	
Pat Sackett	37:44	Martin Kleinman	24:09
		Paul Sackett	24:54
		Kristofer Fenlason	25:46

Women 60-69		Men 60-69	
Jacqueline Seltzer	26:32	M. Peter Scontrino	29:19
Deborah Gebhardt	31:18		

Four-Person Teams

|	
University of Minnesota	88:29
Missouri State University	111:09
SRA International	113:57
Rice University	119:47
Hofstra University	134:54

Mixed Doubles

Herlinde Pieters/Filip Lievens	44:44
Erica Barto/Miguel Gonzalez	46:40
Pat Sackett/Paul Sackett	62:38

Scientist/Practitioner

Herlinde Pieters/Filip Lievens	44:44
Joy Oliver/David Woehr	58:30
Tamara Friedrich/Lauren Blackwell	69.24
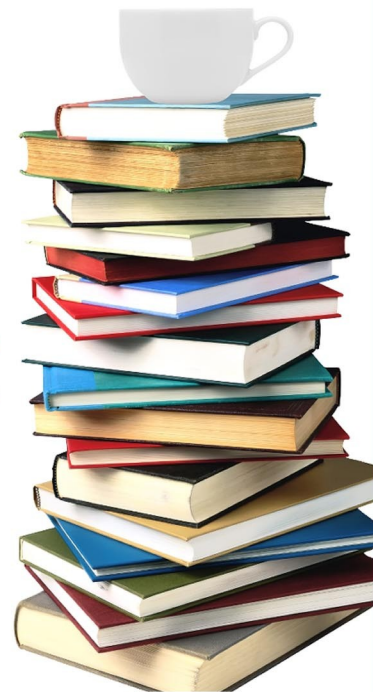
SIOP's 2013 Award Winners
Top Performers in the Field of I-O Psychology Are Honored

Awards of Distinction

Distinguished Professional Contributions Award: **Nancy T. Tippins**, CEB Valtera

Distinguished Professional Contributions Award: **Kenneth Pearlman**, Independent Consultant

Distinguished Scientific Contributions Award: **Wayne F. Cascio**, University of Colorado Denver

Distinguished Service Contributions Award: **Joan Brannick**, Brannick HR Connections

Distinguished Teaching Contributions Award: **Elizabeth Shoenfelt**, Western Kentucky University

Distinguished Early Career Contributions Award (Practice): **Alexander Alonso**, Society for Human Resource Management

Distinguished Early Career Contributions Award (Science): **Russell E. Johnson**, Michigan State University

SIOP Awards

Robert J. Wherry Award for the Best Paper at the IOOB Conference: **Bianca Trejo**, Florida Institute of Technology

S. Rains Wallace Dissertation Award: **Dan Ispas**, Illinois State University

SIOP Foundation Awards

Raymond A. Katzell Award in I-O Psychology: **William C. Byham**, Development Dimensions International

Hogan Award for Personality and Work Performance: **In-Sue Oh**, Temple University; **Gang Wang**, University of Idaho, and **Michael K. Mount**, University of Iowa

Wiley Award for Excellence in Survey Research: **Zhen Zhang** and **Suzanne Peterson**, Arizona State University

John C. Flanagan Award: **B. Parker Ellen III** and **Jeremy D. Mackey**, Florida State University

Best Poster on Lesbian/Gay/Bizexual/Transgender (LGBT) Issues at the SIOP Conference: **Alex P. Lindsey**, George Mason University; **Noah Levine**, Rice University; **Eden King,** George Mason University; and **Michelle Hebl**, Rice University

William A. Owens Scholarly Achievement Award: **Gilad Chen**, University of Maryland; **Robert Ployhart**, University of South Carolina; **Helena Cooper-Thomas**, University of Auckland; **Neil Anderson**, Brunel University, and **Paul Bliese**, Walter Reed Army Institute of Research

M. Scott Myers Award for Applied Research in the Workplace: **Kimberly Smith-Jentsch**, University of Central Florida; **Dana Milanovich Costar**, NAWCTSD; **Stephanie Payne,** Texas A&M University; **Alicia Sanchez**, University of Central Florida; **Danielle Merket,** Naval Air Systems Command Training Systems Division; **Janis Cannon Bowers,** University of Central Florida; and **Eduardo Salas**, University of Central Florida

Jeanneret Award For Excellence in the Study of Individual or Group Assessment: **Junyan Fan**, Hofstra University/Auburn University; **Dingguo Gao**, Sun Yat-Sen University; **Sarah A. Carroll**, Professional Examination Service; **Felix (Jamie) Lopez**, Booz Allen Hamilton, Inc.; **T. Siva Tian**, University of Houston, and **Hui Meng**, East China Normal University

Also, receiving the award the team of **Jill Ellingson**, The Ohio State University: **Eric Heggestad**, University of North Carolina Charlotte, and **Erin E. Makarius**, Canisius College

SIOP Foundation Fellowships And Scholarships

Leslie W. Joyce and Paul W. Thayer Graduate Fellowship: **Mary Jane Sierra**, University of Central Florida

George C. Thornton III Graduate Scholarship: **Alissa Parr**, Pennsylvania State University

Lee Hakel Graduate Student Scholarship: **Ryan C. Johnson**, University of South Florida

Graduate Student Scholarships: **Angela Passarelli**, Case Western Reserve University, and **Katrina A. Piccone**, Florida Institute of Technology

SIOP Foundation Grants

The Douglas W. Bray and Ann Howard Research Grant: **Brett Guidry** and **Deborah Rupp**, Purdue University, and **Martin Lanik**, Global Assessor Pool LLC

Small Grants Program: KiYoung Lee and Michelle K. Duffy, University of Minnesota, and Young-chan Kim, GOLFZON Co.

Also, **Elizabeth M. Boyd**, Indiana University; **Kristen M. Shockley**, Baruch College; and **Whitney Woo**ds, Interactive Intelligence.

Also**, Emily Hunter**, Baylor University; **Malissa Clark**, Auburn University, **Dawn Carlson**, Baylor University**;** and **Cherise Bridgwater**, Hillcrest Baptist Medical Center.

To view the winners, click [here](#)

SIOP Welcomes 23 New Fellows at 28th Annual Conference

During the opening plenary at this year's annual conference, Fellow Chair **Jerry Hedge** presented the newest additions to SIOP's most prestigious group of members.

Fellow status in SIOP is an esteemed honor granted through a rigorous nomination process under the direction of the Fellowship Committee. Society Fellows are distinguished industrial and organizational psychologists who have shown evidence of unusual and outstanding contributions of performance in I-O psychology through research, practice, teaching, administration, and/or professional service.

The contributions of nominees for Fellow are evaluated in terms of impact on I-O psychology and its advancement and their contribution to the mission of the Society: "to enhance human well-being and performance in organizational and work settings by promoting the science, practice, and teaching of industrial and organizational psychology." (To read more about SIOP Fellows, visit the [Fellows](#) page.)

This year's SIOP recognized 23 outstanding I-O psychologists as SIOP Fellows:

Derek R. Avery, Temple University
Zeynep Aycan, Koc University, Turkey
Boris B. Baltes, Wayne State University
Peter Y. Chen, University of South Australia
Berrin Erdogan, Portland State University
Bernardo M. Ferdman, Alliant International University
Roseanne J. Foti, Virginia Tech
Franco Fraccaroli, University of Trento, Italy
Theresa M. Glomb, University of Minnesota
Alicia Grandey, Pennsylvania State University
Leslie Hammer, Portland State University
James LeBreton, Purdue University

Cynthia Lee, Northeastern University
Filip Lievens, Ghent University, Belgium
Therese Macan, University of Missouri-St. Louis
Patrick F. McKay, Rutgers, The State University of New Jersey
Matthew S. O'Connell, Select International, Inc.
Julie Olsen-Buchanan, California State University, Fresno
Scott Oppler, Association of American Medical Colleges
Karen B. Paul, 3M Company
Dan Putka, Human Resources Research Organization
Dirk Steiner, University of Nice Sofia Antipolis, France
Robert Tett, University of Tulsa

Front: Zeynep Aycan, Berrin Erdogan, Robert Tett, Matthew O'Connell, Therese Macan, Julie Olson-Buchanan, Roseanne Foti, Leslie Hammer, Dan Putka. Back: Alicia Grandy, James LeBreton, Scott Oppler, Dirk Steiner, Karen Paul, Boris Baltes, Filip Lievens, Frnaco Fraccaroli, Derek Avery, Bernardo Ferdman, Patrick McKay.

SIOP 2014 Annual Conference Program: Honolulu

Evan Sinar
Development Dimensions International (DDI)

The 2014 SIOP Annual Conference will be a bit later next year, May 15–17, but program planning is already well underway—we recognize the value of having information as early as possible to incorporate into your own planning. The conference will continue to span 3 days—Thursday, Friday, and Saturday—and will retain the diversity in topics and session types that have fueled the success of past conferences. However, we've listened closely to your input from postconference surveys and are making some changes in the program's schedule and content accordingly. This includes having more concurrent sessions to allow for a slightly shorter program day and a focus on topics—such as East–West science and practice collaborations—aligned with the unique Hawaii setting and our increasingly global membership. In addition, under the leadership of Theme Track Chair **Kristen Shockley**, a slate of compelling speakers will delve deeply into the theme of Breakthroughs: when they happen and how integrating divergent perspectives is essential for driving discovery and progress. Stay tuned to SIOP's communication channels in the months to come for more details about program features and evolutions for Honolulu 2014.

The annual conference is our premier opportunity to build and maintain in-person connections with colleagues and to keep our professional knowledge up-to-date about the field's "need to know" innovations and advancements. Some of the most common adjectives you used to describe the past SIOP conference were "Invigorating," "Educational," and "Worthwhile." We in the Program Committee are working to make these attributes more applicable than ever in Honolulu – work with us toward this goal by submitting and signing up to review sessions, and we look forward to meeting you there next year!

Below, we've listed a high-level timeline to help you plan for the 2014 conference. Please note that even though the conference date is later, the submission deadline remains in mid-September (building on your feedback about wanting to have as much time as possible between submissions and the conference). Which means it's a great time already to begin planning your submissions!

Early July 2013: Call for Proposals (electronic only). Members will receive an email message with a web link to the Call for Proposals.

Mid-July 2013: Reviewer recruitment. Please look for an email message requesting that you participate on the Conference Program Committee as a reviewer. All SIOP professional members (Fellows, Members, Associates, International Affiliates, and Retired statuses) are eligible. SIOP Student Affiliates who have successfully defended their dissertation proposal and presented at a SIOP conference as a first author are eligible. The review process is essential to the quality and success of the program. Please contribute by signing up!

September 11, 2013: Submission deadline. As in past years, the submission process will be entirely electronic. The Call for Proposals will have further details.

Mid-October 2013: Submissions sent out for review.

Early November 2013: Reviews due back.

Mid-December 2013: Decision emails. Submitters will be sent information on how to access the decision portal.

April 2014: Program published. The conference program will continue to be published both in a hard-copy booklet and on the web. Remember that only those who register by the early registration deadline will receive their programs in the mail.

Welcome to the Wonderful World
of IRC! (SIOP Institutional Research Committee)

Mariangela Battista
Guardian Life Insurance Company
IRC Chair (2011-2013)

SIOP's Institutional Research Committee (IRC) was created in 2008 to address two primary concerns: the accessibility and security of SIOP survey data (such as the salary and member surveys) and the creation and administration of guidelines regarding the use of SIOP data by SIOP members or third party researchers.

Since 2011, IRC has been run by a small committee: **Charles Scherbaum, Corinne Donovan, Anne Herman,** and Mariangela Battista, Committee Chair. It has been a very active committee over the last 2 years. Besides coordinating major SIOP surveys such as the membership and salary surveys, the committee has responsibility for reviewing requests to analyze SIOP data for research and managing the vendor relationship with SIOP's survey vendor.

Survey Partner

As of January 2012, Sirota Survey Intelligence has administered all SIOP surveys. Sirota does this as a pro-bono service to SIOP. There seems to be an active SIOP survey going on almost all year round! They have been wonderful partners to work with. The IRC and the SIOP Executive Board are quite appreciative of John Mallozzi, **David Reeves,** and the entire Sirota team for all of their tireless work on the behalf of SIOP.

Diversity of Research

2013 proves to be quite busy with nine surveys currently planned. SIOP surveys are sponsored by specific committees to assist with committee objectives. Four surveys are regularly sent to the SIOP membership. These surveys and their sponsors are:

Survey	Frequency	Sponsoring Committee
Exit Survey	Ongoing	Membership
Conference Evaluation	Yearly	Conference
Member Survey	Every 2 years	Membership
Salary Survey	Every 3 years	Professional Practices

Besides perennial surveys such as conference evaluation and membership survey, some new surveys for this year include:

- *SIOP/SHRM Joint Research Survey.* As part of a joint research effort between SIOP and SHRM, this survey examined what human resources delivers and what their customers want in order to sustain human capital practices. The research study contrasted the perspectives of academics, HR practitioners/internal consultants, external consultants, and end users/customers with the goal of determining each group's unique needs, contributions, and priorities to enhance the design, implementation, and durability of HR tools and practices. Look for research results in a future *TIP*.
- *Exit Survey.* This survey goes to SIOP members who did not renew their membership. It is used to collect data for possible retention strategies. Interestingly, a consequence of receiving the survey is that some members now realize their membership lapsed and they renew!

Requests for SIOP Data

Another responsibility of IRC is to review requests to use SIOP data for research. SIOP members, including students, have used membership data for their research. There is a wealth of information to be found in all SIOP data sets. It is expected that researchers share their findings with the SIOP community via TIP articles or conference presentations.

IRC maintains data policies regarding data and research which are intended to ensure several objectives:

SIOP data are used to benefit the membership as a whole,

SIOP members are burdened minimally with requests to provide data and are asked by SIOP to provide data solely to further SIOP business and/or strategic objectives,

Survey data are maintained and disposed of in a consistent and secure manner, and

Survey data are archived to facilitate longitudinal or historical analysis.

As a matter of policy, data collected by SIOP have no practical terminal date. Historical data have value for purposes such as documentation and longitudinal analysis and should be maintained.

Future

Moving forward, IRC hopes that more SIOP members take advantage of the rich data sets available testing different hypotheses and sharing results across the membership.

What Can my.SIOP Do for Me? The New Roadmap Leads the Way

Zack Horn
Chair, Electronic Communications Committee

As my.SIOP continues its rapid rise in popularity among our membership, it is quickly becoming a cornerstone of the SIOP member experience. By making my.SIOP your integrated member home on SIOP.org, it now serves as a central hub to access your account information, interact year-round with your SIOP community, and stay updated with the latest in the I-O profession. Nonetheless, questions remain about how we as SIOP members *actually* benefit from this new capability—and with good reason! By far, the question we hear most often is, "What can my.SIOP do for *me?"* The truth is that we all have varying priorities and goals in our careers, and no one way of utilizing my.SIOP will be "best" for everyone. There are many features at first glance but no clear-cut norms for how to make the most of those features. What we need is a plan—a *guide*—to help us all tailor our my.SIOP experience to favor our own professional goals. Thanks to your feedback, the plan has been put in motion and your interactive guide now exists in the form of the all-new **my.SIOP Roadmap**.

Figure 1: **The All-New, Interactive my.SIOP Roadmap**
Click the image to visit: http://www.siop.org/roadmap.html

The Plan for my.SIOP

SIOP's Electronic Communications Committee (ECC)—the shepherds of my.SIOP—is composed of volunteer SIOP members who, as your representatives, work year round to shape the direction and expansion of online capabilities available to the membership. By adopting a shared platform by which we can find resources, collaborate, and build our pres-

ence as a connected network of SIOP professionals, we can all benefit from knowing how to use my.SIOP to assist in the achievement of our existing professional goals. As such, we have put in motion a multifaceted plan, including Engagement and Marketing initiatives, to **make my.SIOP meaningful to you**, so that instead of adding to your workload, you and all other SIOP members can use my.SIOP to achieve the goals that you *already* value.

Shaping the plan. To shape the plan, the ECC solicited feedback from my.SIOP users via survey early in 2013. The survey contained several open-ended questions that revealed many of the first impressions, assumptions, and myths that members shared regarding my.SIOP. Although the intent of my.SIOP was clear, results found that most members lacked, and were seeking, direction and purpose for how to make the most of my.SIOP. The following questions were most common among early adopters and may still be held by you and many other SIOP members (answers provided for easy reference):

- *How does my.SIOP add to the SIOP Experience?*
  It consolidates your valued resources as a SIOP member and provides year-round access to many of the conversations and partnerships that are produced at the annual SIOP Conference.
- *Is my.SIOP just another social network?*
  No, it is not meant to compete with LinkedIn, Facebook, or any other social network. It is instead the ideal spot to find, converse with, and foster new developments specifically with professionals in the field of I-O.
- *Where do I start? How should I be using my.SIOP?*
  Your best use of my.SIOP is completely dependent upon your professional goals and preferences. To help you make this link, we created the interactive my.SIOP Roadmap.
- *Is there anyone using this?*
  Yes! Upon integrating with SIOP.org, you and every other SIOP member have a profile on my.SIOP. Visit my.siop.org to complete your profile, join groups, and find other ways to discuss topics of interest to you!

Developing a universal guide to my.SIOP. At the ECC, we took note. Blogs, forums, and topic groups are great; however, we recognize that SIOP members will only make use of these tools if a larger purpose exists for their utility. In short, the features of my.SIOP must contribute directly to existing, real-world goals that are already held by I-O professionals. We quickly redirected our resources toward clarifying how to get the most out of my.SIOP, specifically *as I-O professionals.* The connection between these professional goals and my.SIOP features had to be more explicit in order to clarify the true utility of my.SIOP. Using survey results and member polling, the following list of eight universal SIOP member goals emerged: *Seek opportunities*, *expand my network*, *conference toolkit*, *share ideas*, *build my SIOP presence*, *find my resources*, *stay updated*, *find collaborators*.

Identifying the my.SIOP features that support each of these goals was paramount to making my.SIOP useful for SIOP members. For example, if you value **expanding your network,** knowing that the tag cloud, member map, forums, and searchable member directory are all useful tools will provide specific direction for maximizing your utility of my.SIOP. These connections were identified by ECC members as well as *my.SIOP champions*—those who have made productive use of my.SIOP and are happy to share their story with others. An example is as follows:

My colleagues and I had an idea for a conference symposium that was a bit atypical. We needed to find others in the field that shared this area of expertise, could help us flesh out a proposal, and participate in the symposium with us. We leveraged my.SIOP and found a number of interested members. **The connections we have made through my.SIOP have been enduring, far beyond our expectations**. Chris Rotolo (Senior Director, PepsiCo), who used the Groups, Forums, and Member Directory in this effort.

Figure 2 shows the connection between the 12 primary my.SIOP features and the eight professional goals. Soon after this mapping was developed, the theme park-style visualization took shape as an engaging method for displaying a "roadmap" that uses gamification techniques to put my.SIOP in the middle of these meaningful professional goals.

Figure 2. **Connection Between my.SIOP Features and Professional Goals**

Next steps for my.SIOP. The next steps of the ECC's multifaceted plan are already underway. The my.SIOP dashboard will soon be reconstructed to provide easier access to the information we value most. Various other ways to engage my.SIOP are constantly being developed and will be rolled out in the coming weeks and months. Updates will be announced on my.SIOP, as well as through SIOP's social media outlets (e.g., Twitter and Facebook). In addition, various other marketing campaigns and strategies are being developed to make it increasingly clear how my.SIOP can work for you.

So let's now turn the question back to you: How will *you* make the most of my.SIOP? Complete your profile and use the my.SIOP Roadmap to start your path toward making my.SIOP work for you! If you have questions or ideas, let us know on my.SIOP. If you're interested in being part of this highly-creative committee, please volunteer for the ECC!

Report From the APA Council of Representatives, February 2013 Meeting

John C. Scott
APTMetrics, Inc.

SIOP representatives **Debra Major, Deborah Whetzel, Rodney Lowman,** and John Scott attended the February 2013 APA council of representatives meeting in Washington, DC.

The APA council addressed a number of issues and took several noteworthy actions during this meeting. In addition, the Council of Representatives (CoR) was updated on several key initiatives, foremost among them being APA's recent activities related to preventing gun violence.

APA's Recent and Ongoing Activities Related to Gun Violence Prevention

In response to the tragic mass shooting at Sandy Hook Elementary School in Newtown, Connecticut, APA has redoubled its efforts related to gun violence prevention. APA-wide initiatives have involved communications with the White House, Congress, other organizations, the APA membership, and the general public in support of vital mental and behavioral health services, training, and research. In so doing, APA has exercised caution to avoid adding to the stigma associated with mental health problems by clarifying that mental disorders are not the cause of violent behavior.

APA's government relations staff continues to advocate for needed federal legislation, including reauthorization of relevant laws, as well as enactment of new legislation, some of which implements key provisions of the president's plan to reduce gun violence. Of most interest to APA are legislative initiatives that focus on mental and behavioral health, violence, threat assessment, and media and gun violence. APA is also in the process of establishing two new task forces to examine the psychological literature related to gun and media violence to determine whether the association's policies in these areas need to be updated to reflect the most current research.

APA Presidential Initiatives

Dr. Donald Bersoff, APA's newly elected president, presented his three initiatives for this year:

- To ensure that psychologists are in the forefront in providing services to military personnel, veterans, and their families, as well as military members who have been sexually harassed in the service.
- To stimulate more diversity by identifying innovative doctoral programs that have admitted, retained, and graduated students from diverse ethnic cultures so that we can better serve and study those who will very soon populate our plurality nation.
- To advance the creation, communication, and application of psychological knowledge to benefit society and improve people's lives by attracting and retaining academicians and scientists as APA members.

Good Governance Project Report to APA Council of Representatives

The CoR reviewed details about ways of implementing possible new governance models. The current CoR structure is perceived as too large, inefficient, and slow to move on important initiatives. The CoR was particularly interested in fleshing out both the moderate change and clean slate scenarios from the three scenarios presented below.

- Incremental change, which retains the Council of Representatives while adding change options
- Moderate change, which creates an "issues focused" Assembly
- Clean slate, which has a single board of governors and utilizes ad hoc structures to maximize nimbleness, inclusivity, and engagement

The Good Governance Project (GGP) team developed preliminary prototype concepts that were tested with council members, the board of directors, and APA staff. After reviewing the new details associated with the three alternatives, a straw poll was conducted to determine CoR perceptions regarding which of the three models would

most effectively meet APA's governance needs. Surprisingly, a virtual tie resulted between the incremental and moderate change models.

These results suggest that dramatic change in APA governance is not likely in the near future, however there may be room for some positive change within the current structure. More to come!

"Makeover" of APA Convention

Rodney Lowman, chair of the APA Board of Convention Affairs, announced that starting with the 2014 convention there will be a gradual increase in interdivisional programming to enhance collaboration across divisions and content areas in psychology. In the new model, every division will have the opportunity to complement and enhance its program beyond its minimum guaranteed hours by collaborating with other divisions. The model approved by council institutionalizes collaboration as a signature feature of convention. Some of the cross-cutting themes being considered include:

- Psychology and the Public Good
- Violence
- How Technology Is Changing Psychology
- Mechanisms and Principles of Change
- Linking and Integrating Research and Practice

APA Financial Report
- Maintaining a strong balance sheet
- Successfully meeting measures of long term financial health
- Able to invest in important programs
- Retaining significant equity in real estate holdings
- Continuing to receive clean audit reports from an outside CPA firm
- Proposing a balanced budget for 2013 following 3 consecutive years of positive operating margins

In addition, the Council voted to approve the following motions:
- That APA Central Office create and manage a new and centralized membership data collection and reporting structure to meet those data and reporting needs as identified by APA boards and committees, with priority given to data on Early Career Psychologists
- The addition of $14,500 in the 2013 budget to support the work and meeting costs of the joint APA/ASPPB/APAIT Task Force for the Development of Telepsychology Guidelines.
- The addition of $11,700 in the 2013 budget to convene a task force to develop a policy on the prediction and prevention of gun violence that will replace APA's 1994 policy on Firearm Safety and Youth
- The 2013 Proposed Budget with total operational revenues of $108,156,000 and operational expenses of $108,299,000 with a negative operating margin of $143,000. This includes the authorization of the second year funding of $2.1M for the Strategic Plan Initiatives
- The method of funding the Internship Stimulus Plan put forth by management, which includes $900k drawn from net assets and $1.5M in additional cash from the LLCs
- Amend the 2013 Budget to reimburse council members who are not fully funded by APA an additional $500 to attend the July/August 2013 council meeting
- A $6,000 increase to the 2013 budget to fund the 3% increase to the board honoraria and approve the changes to the Selected Spending Policy Guidelines

New APA Convention Structure Creates a Golden Opportunity for SIOP to Become More Involved

Autumn Krauss, Sentis
APA Program Chair

I have to admit I've only been to one APA Convention. It was in 2006 in New Orleans, and I had an opportunity to be involved with the KARE taskforce organized by Divisions 13 and 14 to support businesses after Hurricane Katrina. That was a great experience, though it was only tangentially related to the convention. I know I was part of a team that presented a paper at the same convention because it says so on my vita, but my only recollection from that presentation is that no one really attended the session. Actually, that's not fair, I think maybe three people attended the session. Admittedly, not a great experience for me at my one and only convention, as I definitely had the feeling of being a small I-O fish in a big clinical pond. Looking back, I do own a good amount of responsibility for my experience; I did not use the convention as an opportunity to learn about other psychological specializations and consider how their work might be relevant for what I was doing. Frankly, I didn't try to integrate myself within the broader convention.

Before this convention in 2006 and since, chairs of the SIOP programming for the APA convention have been working diligently to put together relevant and high quality programs for I-O psychologists and also align our programs with other APA divisions. I'm confident that there have been many hard-working SIOP volunteers that have come before the few chairs that I've gotten a chance to know, but I can say for sure that Karin Orvis for APA 2012 (Orlando) and Shonna Waters for APA 2013 (Honolulu) along with their teams of committee volunteers have scratched, clawed, pleaded with, and corralled folks to create the best programming and achieve the best SIOP member attendance possible. Actually, the fruits of Shonna's and her team's labor are still to be realized in Honolulu in August when the 2013 Convention happens: Good luck Shonna, and make sure you write to us about how perfect Honolulu is to host a conference because SIOP will be heading there 9 months after you!

This takes us to 2014 and what I'd like to share with you as the chair for SIOP's APA 2014 programming. Based on a comprehensive review of the convention conducted by the APA in 2010, several important changes will be implemented starting with the 2014 convention.

Here are some highlights of particular relevance to us as SIOP:

- A Central Programming Group (CPG) has been created. They are responsible for increasing interdivisional programming to enhance collaboration across divisions and content areas in psychology. This new focus is in line with the idea that the APA convention is the "one psychology conference" that cuts across all areas of specialization; hence, a need was determined to focus more on integration across the divisions and less on narrow specialization.
- With this new focus on cross-cutting themes, the number of hours for individual divisional programming is reduced and integrated programming is prioritized. For instance, the CPG will be allocating 125 hours to programs proposed by two or more divisions for 2014, with this number intending to grow over time. Such proposals can also request funding for premier presenters.
- To foster more cross-divisional programming, the first ever in-person meeting of all APA division program chairs was held in DC earlier this year. During this meeting, the following 11 themes were identified as the priority areas to focus on for cross-divisional programming:
  1. Psychology and the public good
  2. Violence
  3. How technology is changing psychology
  4. Mechanisms and principles of change
  5. Linking and integrating research and practice
  6. Reducing mental health stigma in underserved populations
  7. Access to healthcare/healthcare disparity: Improving integration of healthcare to vulnerable populations
  8. Integrating science, technology, engineering, art, and math (STEAM) with psychology
  9. A multisystems approach to primary prevention: It takes more than a village

10. Cultural competencies
11. Addictions (special populations and addictions)

- These proposed themes will be considered at CPG's first meeting in late May 2013. At that time, CPG will decide on the final themes and the procedures by which the cross-cutting proposals, which must be submitted by at least two divisions, will be chosen from among those submitted.
- A new formula will be used to allocate individual division programming hours based on attendance by actual members of the divisions. Under this new proportional model, each division is guaranteed a minimum of 10 hours. Recognizing that a transition period is needed, in this first year of implementation, divisions will retain at least 70% of their historically assigned hours with the full proportional model being implemented within 3 years.

So, what does this mean for SIOP? Well, from my perspective, it means quite a lot. First, it means we have a chance to align with divisions that have historically had more of a role in the convention and create cross-divisional sessions that will likely be well-attended and impactful at the convention. Second, several of the cross-cutting themes identified are in line with areas of focus within SIOP, so we can likely contribute to some quality cross-divisional sessions. I mean, "linking research to practice?" Um, we OWN research to practice! Third, it means that if SIOP members don't show up to the APA convention, we could end up with as little as 10 hours of programming for our division, beyond any of the cross-divisional sessions that we submit and are accepted. And this means, it is a great time to reinvest in the convention if we want to continue to have a presence there.

Finally, with this convention programming shift in mind, please know that we will not be including an option during the SIOP 2014 Conference presentation submission process to elect to be considered for APA 2014 if your submission is rejected to SIOP. The APA convention chairs past, current, and future discussed this with the SIOP conference chairs and for several reasons we have decided that this approach is not working as effectively as we would have liked, particularly with APA's new focus on integrated programming. This means that you should start planning now to submit to the APA 2014 convention in DC. As in past years, we are striving for an excellent I-O program at the convention. So you know, the submission deadline is usually late November/early December.

Given our goal is to make this convention the Best. Convention. Ever., the Committee welcomes any and all ideas about how to make this happen. Please get in touch with me at autumn.krauss@sentis.net if you'd like to be involved in this effort. If you're wondering how you might be able to contribute, here are some ideas:

- Do you have an idea for a multidisciplinary session that we can plan now as part of our submissions for cross-divisional programming?
- Do you conduct research or consult within any of the cross-cutting themes identified above and would be interested in participating in a cross-divisional proposal?
- Do you want to join the SIOP Committee for APA Convention Programming and be involved in creating our new integrated program for 2014?
- Do you belong to multiple APA divisions and have some connections that could assist us in building multidisciplinary programming?
- Are you a SIOP member based in the greater DC area that could assist with mobilizing the local I-O community to participate in the Convention?

Well, I think that's about it from me as far as an update at this point. I'll leave you with a bit of a call to action. Let's seize this opportunity to increase SIOP's visibility, participation, and representation at the APA convention! The research and practice that we engage in reflects good psychology not just I-O psychology. We have a great opportunity to see our involvement in the APA Convention grow. Time to make it happen!

SIOP Frontiers Book Series Call for Statements of Interest: Summer 2013

Since 1986 The Frontiers Book Series produced under the auspices of the Society for Industrial and Organizational Psychology has been instrumental in advancing the scientific status of the field. Under a succession of very capable editors, starting with **Ray Katzell** of New York University and most recently with **Ed Salas** of the University of Central Florida, the series has published books that have been rigorously vetted, are timely, and have been impactful. As the Incoming Series Editor, and on behalf of the Editorial Board, I want to invite statements of interest for future volumes. This will serve as an initial step toward building out our portfolio in the course of the next few years. Note that going forward our publisher will be producing both paperback and electronic versions of our books.

With this goal in mind it would be helpful if the prospectus is prepared according to the format outlined below. Although I welcome one at any time, our Editorial Board will be meeting before September 2013 to consider what has been submitted by that date. A positive review by the Board will lead to a request for a more detailed proposal to be acted upon by the Board in an expeditious manner.

Do not hesitate to contact me if you have questions regarding this solicitation or about the SIOP Frontiers Book Series generally.

Rich Klimoski: Editor SIOP Frontiers Book Series, George Mason University; rklimosk@gmu.edu

SIOP Frontiers Book Series Editorial Board: **Neal Ashkanasy**, University of Queensland; **Gilad Chen,** University of Maryland; **Jill Ellingson**, The Ohio State University; **Deborah Rupp**, Purdue University; **Ruth Kanfer**, Georgia Tech; **Eden King**, George Mason University; **Fred Oswald,** Rice University; **Mo Wang**, University of Florida; **Howard Weiss,** Georgia Tech

SIOP Frontiers Book Series Prospectus Format

- Name and contact information of the person preparing the prospectus
- Title of the proposed volume
- Editor(s) to be
- Your interest. If not self-nominating to be an editor or coeditor of the volume, what role would you play?
- Time frame. Over what time period (dates) would you see this volume being prepared? When would you prefer to start? When would you expect to deliver? Note that the publisher can get a book out within 7 months of receiving a completed manuscript.
- Brief description. In one or two paragraphs describe the work, its rationale, approach, etc. If there are any outstanding, unique or distinctive features, these should be noted (e.g. "it would involve a global perspective," etc.)
- Value proposition. Describe in a few paragraphs why or how the Frontiers Series might advance the field by publishing the work. For example, you might state that it would provide an original integration of several streams of research that must be linked for the field to move ahead. You might make a case that there is a critical mass of scholarship that is ready to be harvested. Or, importantly, you might describe how such a volume can make an impact on research, practice or policy. Because SIOP also publishes the Practice Book Series, you might also want to add some material that would clarify how the proposed volume would be different from (or at least complement) a Practice Series book on the same topic.
- Market considerations. Briefly describe the potential of the volume to succeed in the marketplace. Attend to such things as a gap in the current portfolio of the Frontiers Series that deserves to be filled, the nature of the competition that exists for such a volume (a few examples here would help), the audience for whom the book is intended, or any other information that would imply that the book would sell at a respectable level (e.g. 1,000–5,000 copies).
- Any other information that would serve to make the case that it should be published by SIOP as a Frontiers volume.

IOTAS

Chelsea Wymer
Xavier University

Transitions, New Affiliations, Appointments

The Telfer School of Management at the University of Ottawa is pleased to welcome two new colleagues. After a decade at Université de Montréal's I-O program, **François Chiocchio** will join the OBHR group as an associate professor. François is currently the Canadian Society for Industrial and Organizational Psychology Chair of the Administrative Science Association of Canada's Organizational Behavior division. François will work along current faculty members **Silvia Bonaccio** and **Laurent Lapierre.**

Dr. Michael Braun will be joining the I-O area at Virginia Tech this fall. Mike earned his PhD from Michigan State in 2012 and is currently finishing a postdoctoral fellowship at Georgia Tech. Mike's primary substantive research interest is team processes, with foci on knowledge building, decision making, leadership, and cohesion. His research on team processes integrates seamlessly with his cutting-edge quantitative research on Type-II error rates when modeling growth processes.

Honors and Awards

In-Sue Oh of Temple University was profiled as a Rising Star in the APS *Observer.* In-Sue received his PhD from the University of Iowa and is currently an associate professor in the Department of Human Resource Management at Temple University. He has published over 40 journal articles and his research currently focuses on roles of individual differences in predicting and explaining work outcomes.

Rising Star in the APS Observer

David Chan at Singapore Management University has been awarded the 2013 Lee Kuan Yew Fellowship for Research Excellence. This award was given to David in recognition for his outstanding research contributions. In addition, David has been appointed to the Research Advisory Panel for the National Population and Talent Division at the Singapore Prime Minister's Office.

George Thornton, professor emeritus in the Department of Psychology at Colorado State University, was presented the Legacy Award from the South African Assessment Centre Study Group at a recent conference in Stellenbosch, South Africa. The award recognized Dr. Thornton's lifetime outstanding contributions to the science, practice, and organization of assessment centers for assessment and development of managers and leaders. Over the past 25 years, Dr. Thornton has traveled to South Africa five times to make presentations at conferences and universities, give workshops, consult with organizations, serve on graduate thesis committees, collaborate in research, and co-author publications. He has served as an international advisor to the Assessment Centre Research Focus Area at Stellenbosch University.

Good luck and congratulations!

Keep your colleagues at SIOP up to date. Send items for IOTAS to Morrie Mullins at mullins@xavier.edu.

SIOP Members in the News

Clif Boutelle

Reporters have found SIOP and its members to be credible news sources who can provide them with key to information for work-related stories. And, it is not always the mainstream news media—large metropolitan newspapers and magazines—contacting SIOP members. There are numerous specialty publications and online sites looking for knowledgeable people to assist with stories. These publications have a surprisingly large readership and offer exposure opportunities for I-O psychology in a couple of ways: Reporters learn about the field by talking with SIOP members and readers can become aware of I-O through the stories.

Because there are so many different media outlets, SIOP members are encouraged to share those outlets with the Administrative Office so we can add them to our growing media list to send our stories and refer SIOP members to reporters.

Every mention of a SIOP member and his or her work or comments in the media is helpful to our mission to gain greater visibility for I-O psychology and the work its members are performing.

Following are just some of the mentions in recent months:

A lengthy profile on **Adam Grant** of the University of Pennsylvania's Wharton School and his research on productivity appeared in the March 27 issue of *The New York Times*. The article noted that Grant's research, which has generated broad interest in the study of relationships at work, will be published in his book, *Give and Take*. The greatest untapped source of motivation, he argues, is a sense of service to others. "Focusing on the contribution of our work to other peoples' lives has the potential to make us more productive than thinking about helping ourselves.

A similar story about Grant's research on workplace motivation ran in the April 30 issue of *Business Insider*.

The New York Times ran a March 15 story focusing on Google's efforts to provide unorthodox workplaces and lavish perks that yield an environment of creativity. Google's **Brian Welle** noted that the variety of perks, which include an array of free food for employees, as unusual as they may seem, have been researched and backed by data. "We care about our employee's health, and our research shows that if people cognitively engage with food, they make better choices," he said. Also contributing to the story was **Teresa Amabile** of Harvard Business School who said "there's some evidence that great physical space enhances creativity…(those spaces) are where people want to be and it facilitates idea exchange. I've watched people interact at Google, and you see a cross-fertilization of ideas."

For a March 14 *Business News Daily* and Fox Business News story on job skills employers want to see in their workers, **Lynda Zugec** of The Workforce Consultants with offices in New York City and Toronto cited conscientiousness as a key attribute. "Time and time again, conscientiousness proves itself to be among the top indicators of job performance," she said. "Make sure you pay attention to the details," she advised. "Spelling and grammatical errors, lost and misplaced files, or general disorganization have the potential to make or break you."

Ben Dattner of Dattner Consulting in New York City was quoted in a March 7 article on *AOL.com's* employment trends that said while there is ample evidence about the benefits of a career coach, there are times when it might be a waste of money. Dattner said psychological counseling is advisable and that prospective clients should question whether they are simply transferring other problems onto their career.

Announcement of a $5 million Department of Defense grant to study and implement workplace training for supervisors of returning veterans to **Leslie Hammer** of Portland State University was reported in March in several media outlets, including the *Portland Oregonian*. Hammer and her research team will focus on Oregon veterans of the National Guard and Reserves. "We want to make a better life for veterans by providing more supportive workplaces," she said.

A story in *Credit Union Management Magazine* about preemployment testing tools included comments by **David Arnold** of Wonderlic. He said because of its flexibility online testing is perhaps the most popular tool. "It's helpful from both the prospective employee's perspective as well as the employers," he said. "It really cuts down the amount of time an employer might waste talking to and processing individuals who won't make it further in the process," he added.

When Yahoo notified employees that it was ending telecommuting, it's reasoning included "speed and quality

are often sacrificed when we work from home." Not all workplace experts agree, noted a February 26 story on *NBC News*. **Tahira Probst** of Washington State University said "telecommuting is associated with significantly higher levels of job satisfaction, lower turnover intentions, reduced role stress, and higher supervisor ratings of job performance. The data actually suggest telecommuting is associated with a more positive relationship with one's supervisor."

Lynda Zugec of The Workforce Consultants with offices in New York City and Toronto told *E-Commerce Times* on February 26 that Yahoo could emerge as a more efficient company if it is successful in retaining top talent and weeding out underachievers. "However, ending telecommuting could hurt morale and loyalty in the short term. A strong communications plan needs to be put in place for existing employees," she said.

Narcissists are often destructive leaders, but when carefully identified and addressed, they can be modeled to benefit an organization, according to a study by Hogan Assessment Systems that was reported in the February 19 issue of *HR Executive Online.* "If you provide (narcissistic) employees with a realistic understanding of their strengths, weaknesses, and behavioral tendencies, they can harness the positive outcomes associated with narcissism and avoid taking it overboard," said Hogan's **Jeff Foster** who along with **Dara Pickering** compiled the report. "Sadly, narcissists are charming to their superiors but brutal with subordinates," noted Ben Dattner of Dattner Consulting in New York City. HR can endeavor to make the narcissist's style and behavior more visible to top management and send a clear message that "successfully managing down is managing up," he added.

When NFL teams made multimillion dollar decisions about which players they would draft this spring, they had a new psychological exam, developed by **Harold Goldstein** of Baruch College and attorney Cyrus Mehri. The new test received widespread media coverage, including the February 18 *USA Today* and February 21 *New York Times.* Called the Player Assessment Tool, it measures a wide range of competencies, including learning styles, motivation, decision-making skills, responding to pressure or unexpected stimuli, and core intellect. The test closely resembles those given to firefighters who, like football players, must be able to quickly assess a situation and react under stress. It also eliminates the impact of prior knowledge, subjects taught in school that may be influenced by racial and socioeconomic factors.

Being defensive about workplace criticism is likely to make a person unhappy, and have lower performance ratings and self-esteem, according to research published in the Feb. 16 *USA Today.* The article quoted **Casey Mulqueen** of TRACOM Group in Colorado. "People who respond defensively to criticism are feeling out of control, both emotionally and in terms of their work autonomy," he said. Instead, people should be open-minded and willing to hear the lesson behind the critique and they will be happier in the job.

When an outside CEO is hired by an organization, existing executives need to show the new boss their value, a *Wall Street Journal* story reported February 14. With some estimates showing a 20%-40% chance that some top executives won't be retained after an outside CEO arrives, **Paul Winum** of RHR International (Atlanta) said holdovers must "recognize they have a new job, to help the new boss succeed."

After enterprise software giant SAP took the highly unusual step of appointing co-CEOs, other global organizations watched closely to see if two heads could be better than one. Winum was quoted in a February 9 *Barron's CEO Spotlight* story about the move. Fewer than 1% of the world's 2,500 largest global companies have co-CEOs, and most of those are transitional, according to Booz & Co. As rare as it is, Winum noted "ensemble leadership could be a model of the modern, global corporation."

Lynda Zugec of The Workforce Consultants also contributed to a January 24 story in the *Chicago Tribune* about changing careers. For job seekers dealing with career changes, it is advantageous to conduct an assessment of the transferable knowledge and job skills developed in a previous job or jobs and how they may apply to the new intended career path, she said. "Interpersonal skills, problem solving ability and project management are examples of knowledge and skills that can be applied in differing context and careers," she added.

Please let us know if you, or a SIOP colleague, have contributed to a news story. We would like to include that mention in SIOP Members in the News.

Send copies of the article or a link to SIOP at Boutelle@siop.org.

CONFERENCES AND MEETINGS

Please submit additional entries to **David Pollack** at
David.Pollack@Sodexo.com.

2013

July 21-24	Annual Conference of the International Personnel Assessment Council. Columbus, OH. Contact: IPAC, www.ipacweb.org.
July 31 - August 4	Annual Convention of the American Psychological Association. Honolulu, HI. Contact: APA, www.apa.org. (CE credit offered.)
August 3-8	Annual Convention of the American Statistical Association. Montreal, Canada. Contact: ASA, www.amstat.org. (CE credit offered.)
August 9-13	Annual Meeting of the Academy of Management. Orlando, FL. Contact: Academy of Management, www.aomonline.org.
Sept 30 – Oct 4	Annual Conference of the Human Factors and Ergonomics Society. San Diego, CA. Contact: The Human Factors and Ergonomics Society, www.hfes.org. (CE credit offered.)
Oct 14-19	Annual Conference of the American Evaluation Association. Washington, DC. Contact: AEA, www.eval.org.
Oct 18-19	SIOP Leading Edge Consortium. Richmond, VA. Contact: SIOP, www.siop.org. (CE credit offered.)
Oct 25-26	River Cities I-O Psychology Conference. Chattanooga, TN. Contact: http://www.utc.edu/Academic/Industrial-OrganizationalPsychology/RCIO2013.htm
Oct 28 - Nov 1	Annual Conference of the International Military Testing Association. Seoul, South Korea. Contact: www.internationalmta.org.

2014

Feb. 20-23	Annual Conference of the Society of Psychologists in Management (SPIM.) New Orleans, LA. Contact: www.spim.org. (CE credit offered.)
March 2-5	Annual Innovations in Testing Conference, Association of Test Publishers. Scottsdale, AZ. Contact: www.innovationsintesting.org.
March 5-8	Annual Conference of the Southeastern Psychological Association. Nashville, TN. Contact: SEPA, www.sepaonline.com. (CE credit offered.)
March 14-18	Annual Conference of the American Society for Public Administration. Washington, DC. Contact: ASPA, www.aspanet.org.

| April 2–6	Annual Convention, National Council on Measurement in Education. Philadelphia, PA. Contact: NCME, www.ncme.org.
April 3–7	Annual Convention, American Educational Research Association. Philadelphia, PA. Contact: AERA, www.aera.net.
May 4-7	Annual Conference of the American Society for Training and Development. Washington, DC. Contact: ASTD, www.astd.org.
May 15-17	Annual Conference of the Society for Industrial and Organizational Psychology. Honolulu, HI. Contact: SIOP, www.siop.org. (CE credit offered.)
May 22-25	Annual Convention of the Association for Psychological Science. San Francisco, CA. Contact: APS, www.psychologicalscience.org. (CE credit offered.)
June 5-7	Annual Conference of the Canadian Society for Industrial and Organizational Psychology. Vancouver, BC. Contact: www.psychology.uwo.ca/csiop.
June 22-25	Annual Conference of the Society for Human Resource Management. Orlando, FL. Contact: SHRM, www.shrm.org. (CE credit offered.)
July 8-13	International Conference on Applied Psychology. Paris, France. Contact: www.icap2014.com.

Errata
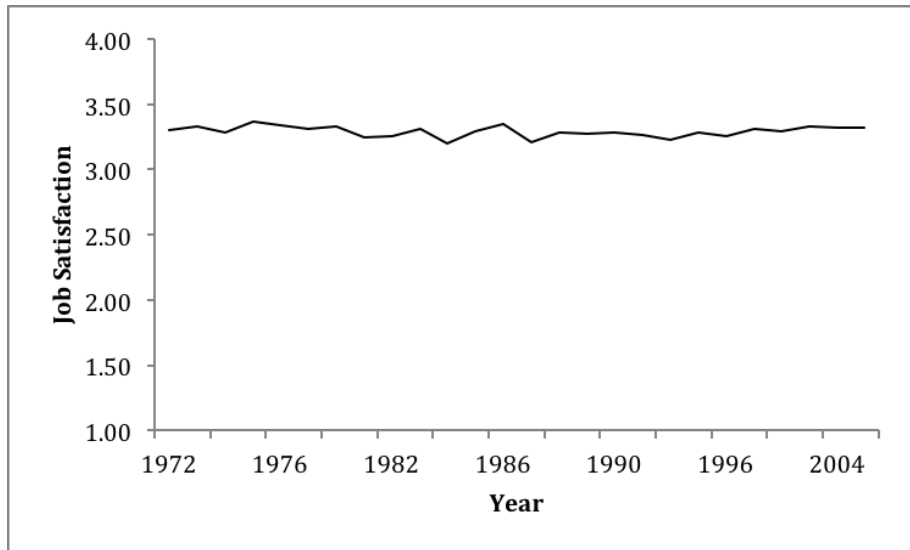
Figure 1. Trend in mean levels of job satisfaction based on the General Social Survey between the years of 1972 and 2006 (1 equals "very dissatisfied" and 4 equals "very satisfied")
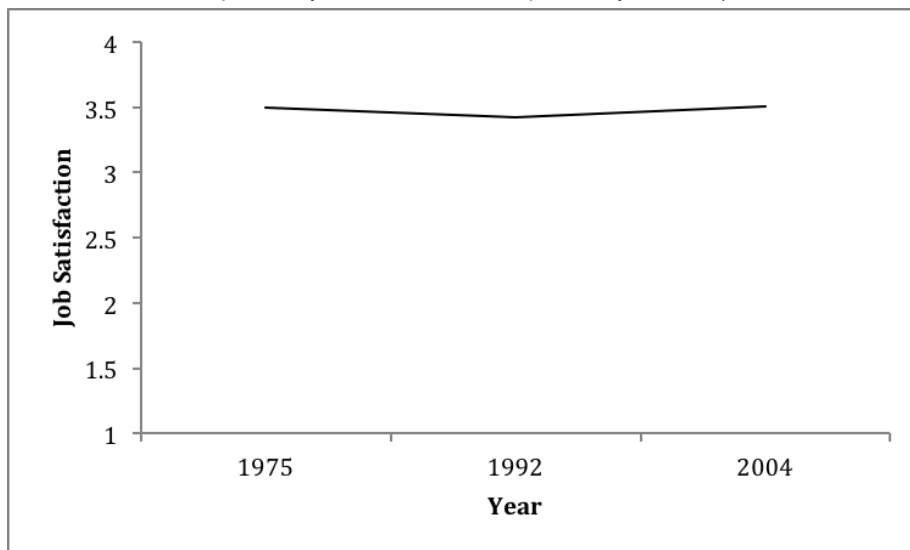

Figure 2. Trend in mean levels of job satisfaction based on the Wisconsin Longitudinal Study between the years of 1975 and 2004 (1 equals "very unsatisfied" and 4 equals "very satisfied")
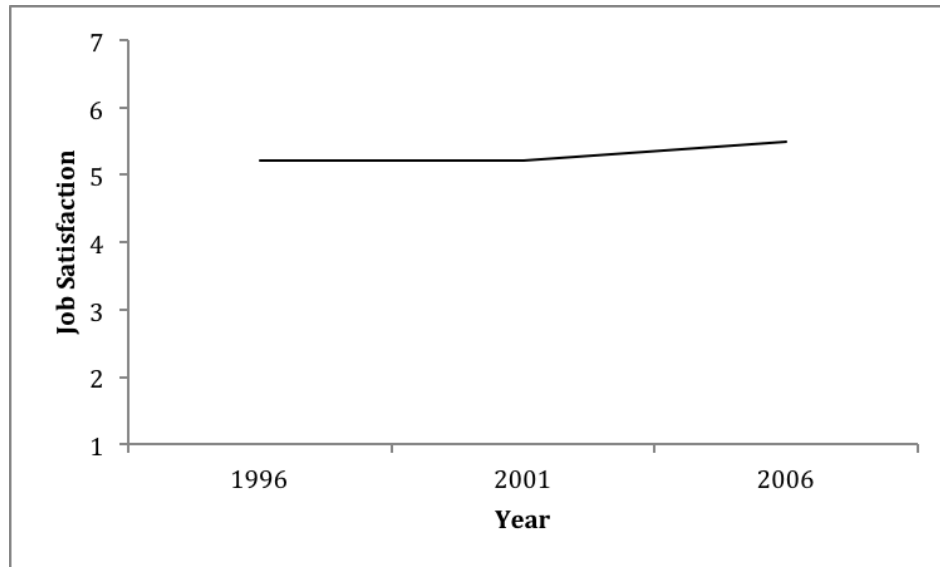
Figure 3. Trend in mean levels of job satisfaction based on the Adult Longitudinal Panel between the years of 1996 and 2006 (1 equals "strongly disagree" and 7 equals "strongly agree")

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